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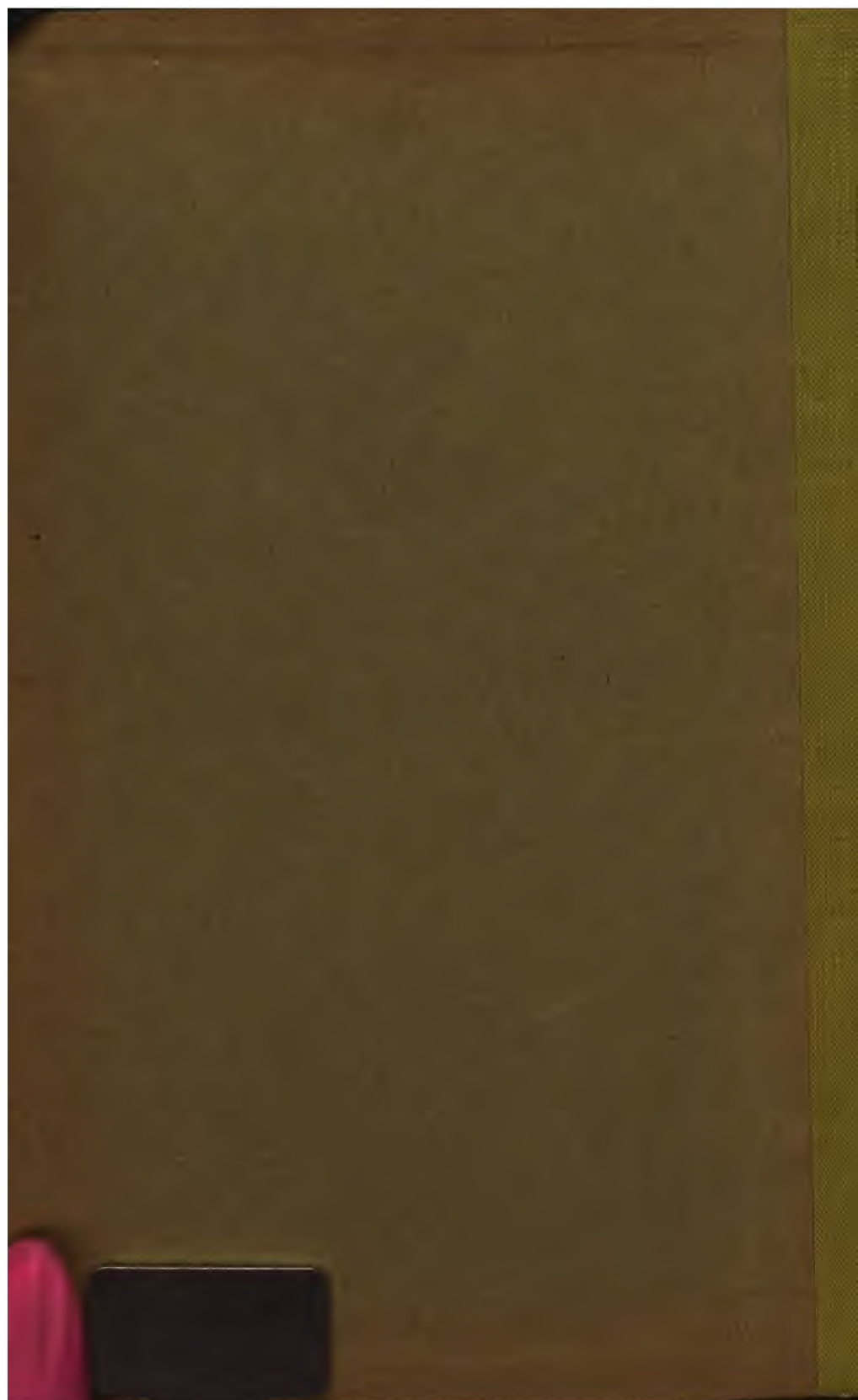
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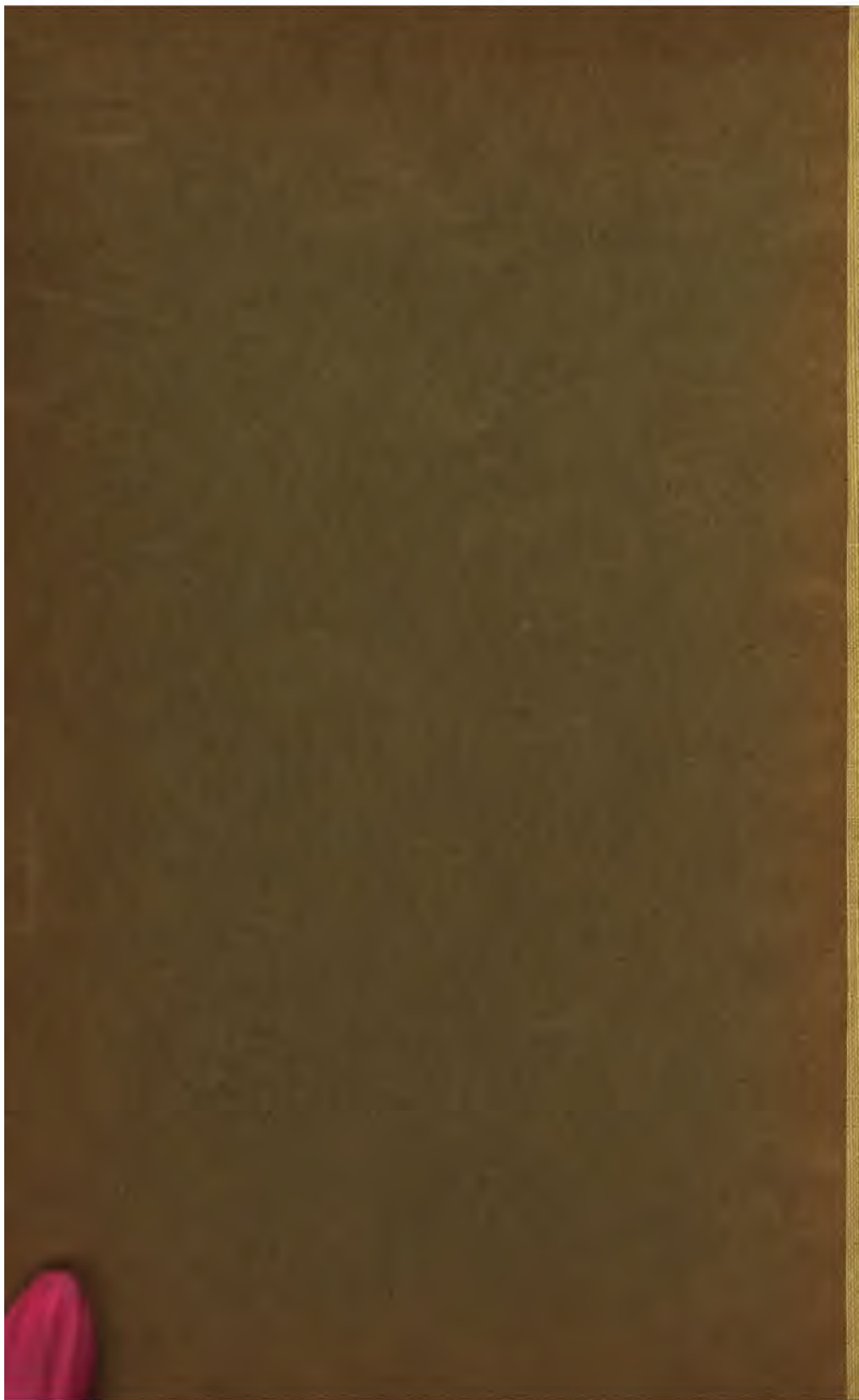


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VDDR  
Mississippi  
Engineer









**ANNUAL REPORT**

**OF THE**



**CITY ENGINEER**

**OF THE**

**CITY OF MINNEAPOLIS**

**FOR THE**

**YEAR ENDING DECEMBER 31, 1914**

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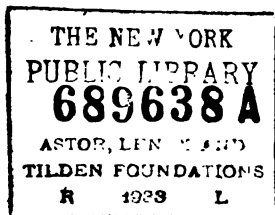
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**F. W. CAPPELEN, City Engineer**

**M. Am. Soc. C. E.**

**SYNDICATE PRINTING COMPANY  
MINNEAPOLIS, MINN.**

**1918**



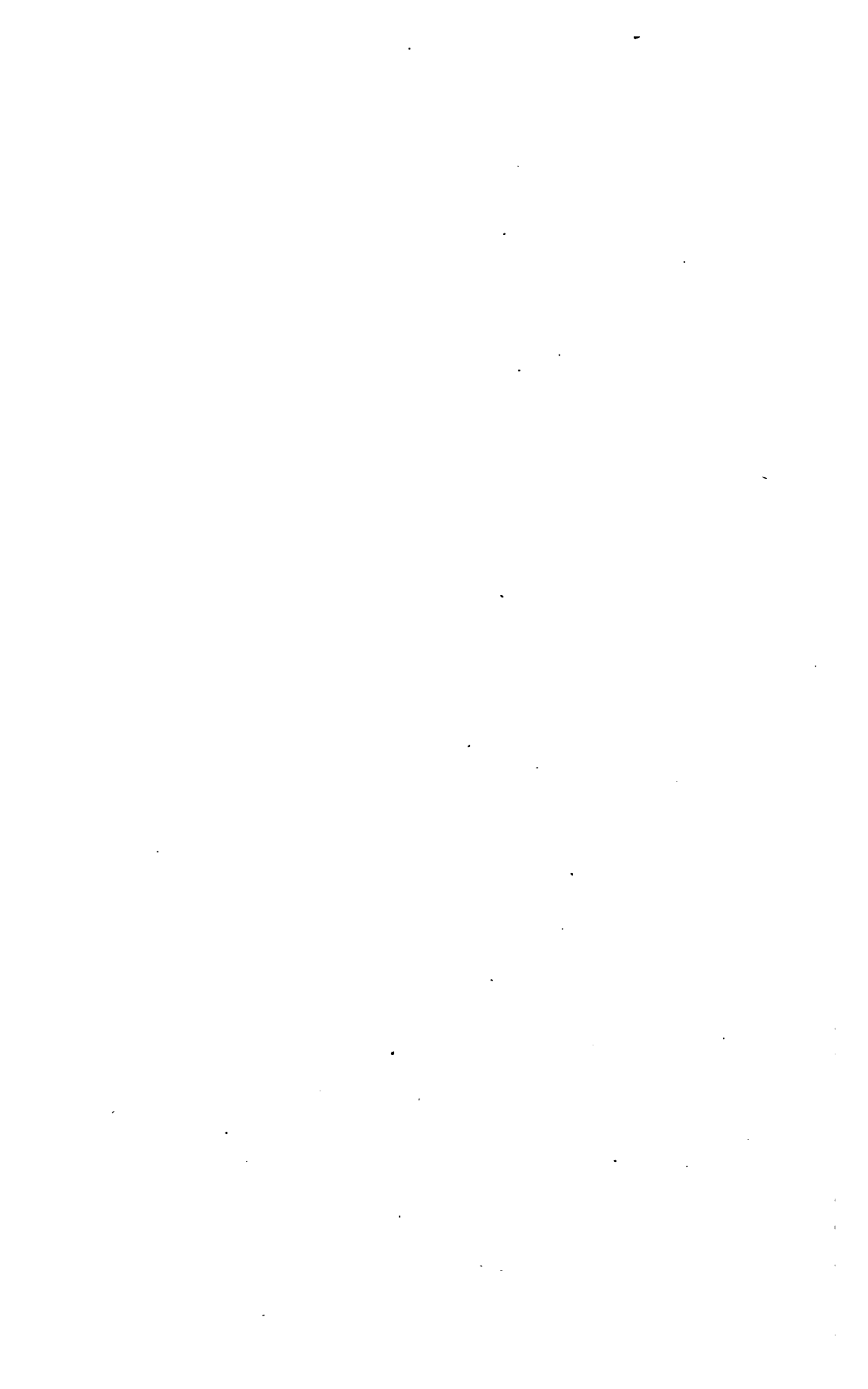
Minneapolis, Minn., January 30, 1914.

*The Honorable City Council.*

Gentlemen: I herewith submit the annual report of the work done under my direction for the year ending December 31st, 1914.

Respectfully submitted,

F. W. CAPPELEN,  
*City Engineer.*



1914

**SEWER DEPARTMENT.**

Although the city, during the year 1913, expended more money for sewers than in the previous year, to-wit; a total of \$713,826.00, still more money was expended during the year 1914, the total sum for the year being \$716,923.22, with which 21.245 miles of sewer were constructed.

The total mileage of sewers and sewer drains in the City of Minneapolis on December 31, 1914, was 376.009, at a total cost of \$9,847,399.64.

There are 34,012 house connections to the sewer system, and 8,824 catch basins, and to clean and maintain the entire sewer system for the year 1914, it cost \$48,979.48.

During the year, less trouble was experienced with overflow of sewers due to heavy storms, as the ordinance that was put into operation the previous year, calling for gate valves to shut off house connections in certain districts, during heavy storms, had good effect.

During the year, a fine piece of land located between Longfellow avenue and Hiawatha avenue and the C. M. & St. P. Railway tracks, and from 26th street to 28th street, containing 4.5 acres of land was acquired for warehouse purposes for the sewer department, water department, and partly for the paving department. Two sidetracks were built for the portion to be used by the sewer department—and a fine brick warehouse, garage and barn were constructed; the entire improvement being of tremendous importance to the sewer department, and enabling same to properly care for the great amount of machinery and material necessary to be handled by this department.

1914

**BASSETT CREEK.**

During the year, plans were presented for the straightening of Bassett Creek, from Dupont avenue and 6th avenue north, to 5th street, and providing for a conduit of 20-foot span and 10 feet in height to enclose the entire creek—and take the storm water of same. The plans were for reinforced concrete construction with a flat roof.

This work was commenced in September, and about 450 lineal feet lineal feet was finished at a cost of \$38,804.61.

As the ground is very soft, piling had to be used both for the walls and the bottom floor of the conduit.

This work was also carried out by the bridge department.

1914

**PAVING DEPARTMENT.**

During the year 1914, the following different kinds of paving were laid:

Asphalt .....	42,621.7	yards
Brick .....	10,634.1	yards
Creosoted wood blocks, 3½-inch.....	182,930.3	yards
Creosoted wood blocks, 4-inch.....	21,724.4	yards
Concrete .....	64,886.4	yards
Granite blocks .....	7,931.4	yards
Macadam .....	958.3	yards
<b>Making a total of.....</b>	<b>331,686.6</b>	<b>yards</b>
<b>At a total cost of.....</b>	<b>\$648,456.16</b>	

Of these amounts, 104,843.7 yards of creosoted wood blocks, and 14,803 yards of granite, were constructed under the Elwell law. Of the asphalt work done, 23,739.6 yards was covering old sandstone



pavements with asphalt; and 3,178.5 yards was surfacing an old asphalt street. All of the asphalt work was done by the city's plant installed in 1913; and this plant is giving very good satisfaction.

The only new equipment bought for the paving department during 1914, was two Milwaukee street concrete mixers.

Creosoted wood block pavement is still a favorite in Minneapolis, and the work has been done under the same specifications as before—using nothing but Southern yellow pine, and 16 pounds of creosote preservative to the cubic foot.

The Topeka specifications were used for the asphalt work, and the following kinds of asphalt were used: Texaco, 138 tons, and Magnolia, 384 tons.

The Paving Department was allowed \$8,000.00 to build an addition to its warehouse at 125 Bryant avenue north, and this work was commenced in the late winter of 1914.

Paving repairs were taken care of by the department in a satisfactory manner, but a great deal of trouble was experienced with the Barber Asphalt people to repair their streets, the guarantee for which expires in 1916; and it is hoped that next year some arrangement can be made by which the city can take over the maintenance of the asphalt streets itself—as it now has the proper equipment.

### SIDEWALKS.

During the year, 46.22 miles of sidewalks were laid, at a total cost of \$122,472.20.

As stated in my 1913 report, the sidewalk department is the only one that is not as satisfactory as it ought to be. The laying of all walks should be done by the city, instead of by contract—and this is the only part of the municipal work that is not done by the day labor system; the reason being that there are about fifty sidewalk contractors doing this work—and as the charter also provides that each property owner can lay his own walk, the proposition is somewhat complicated.

Considerable trouble is also experienced in the repairing of sidewalks, and Your Honorable Body helped matters out during the season by ordering the City Engineer to do the repairing work without notice to the owners.

### CURB AND GUTTER.

The city built 67.127 miles of artificial curb and gutter at a cost of \$119,516.10. 4.784 miles of artificial curb was built by owners, at a cost of \$8,840.62. The city also built .872 miles of granite curbing at a cost of \$4,164.60. The city also moved, in changing the width of roadways, 5.252 miles of curb, at a cost of \$3,770.61—making a total mileage of curbing for the year of 78.035.

### 1914

#### ELWELL LAW.

The Elwell Law gives the city the right to grade streets; pave same, build sewers, water mains and sidewalks, and permits the city to either charge up the cost of the entire improvement to the benefited property owners, or the city may pay the entire cost or any part thereof. As a general proposition, the benefited property owners pay two-thirds, and the city one-third of the entire improvement, and the owners have twenty years in which to pay their share.

The money is provided for by the sale of certificates, and may pay, not to exceed five per cent interest—and these certificates find a ready market amongst bankers, at once.

Under this Elwell Law there were seventeen streets graded at a total cost of \$93,408.61; at an average cost of .421 cents per cubic yard.

#### OILING OF STREETS IN 1914.

A great deal of oiling of streets was done during the year, there being 994,610 square yards. The following companies furnished oil during the year: Pure Oil Company, Indian Refining Company, Standard Oil Company and the Climax Western Oil Company, at an average price of from 3½ cents to 4½ cents per gallon. See attached table.

We find that the best results with oiling was by the use of power oilers, and it was also found that the Austin Power Oiler gave the best results.

## CITY ENGINEER'S REPORT

## COST OF ROAD OILING, 1914.

Ward	Number of Applications	Total	Square Yards Paved	Dirt	Gallons per Mile	Gallons per Square Yard	Square Yards per Gallon	Oil, Cents	Labor, Cents	Total, Cents	Cost per 1 in. Each Side
1st	2	15,220	.....	15,220	6,880	0.342	2.92	1.283	0.083	1.366	2.80
2d	2	81,130	.....	52,680	4,590	0.231	4.33	0.824	0.068	0.892	1.85
3d	2 on macadam,	135,090	97,150	37,940	2,900	0.145	6.89	0.558	0.244	0.802	1.68
	3 on dirt	4,340	.....	4,340	7,880	0.394	2.54	1.419	0.256	1.675	3.51
5th	2	240,910	.....	240,910	7,130	0.358	2.79	1.385	0.284	1.619	3.39
7th	2	40,360	10,040	30,320	6,000	0.302	3.30	1.101	0.201	1.302	2.72
8th	2	11,080	.....	11,080	6,300	0.317	3.15	1.19	0.08	1.27	2.66
9th	2	466,530	60,230	406,300	7,680	0.385	2.60	1.563	0.356	1.919	4.02
13th	3										
Total square yards	.....	994,610	195,870	798,740	6,170	0.309	3.57	1.159	0.195	1.354	2.83

Remarks: Gallons per mile is based on 34-foot width. Cost per 1 foot each side is based on 34-foot width. Oil cost,  $3\frac{1}{2}$  c to  $4\frac{1}{2}$  c per gallon. Labor cost, \$2.40 per day. Teams cost \$4.75 per day. Average gallons and cost.

Macadam: Paving in Second ward is 35 per cent of total square yards; paving in Third ward is 72 per cent of total square yards; paving in Eleventh ward is 25 per cent of total square yards; paving in Thirteenth ward is 13 per cent of total square yards. Street commissioner estimates 1.10 gallons per square yard on macadam, street commissioner estimates 2,000 gallons per mile on macadam.

1914

**BRIDGES.**

A great deal of work was done by the Bridge Department during the year. The 42nd avenue north and Plymouth avenue bridges over the Mississippi river were completed. The only part remaining from last year was the building of the reinforced concrete sidewalks. The three old spans at the west approach of the Plymouth avenue bridge were taken down by city forces, and stored at Ramsey street near the Northern Pacific railway tracks, for future use or sale. The total cost of the Plymouth avenue bridge was \$142,417.00, and the cost of the 42nd avenue north bridge was \$180,302.00.

The Steel Arch bridge was repaved with creosoted wood blocks.

As the Street Railway Company was instructed to build a new car line crossing the Mississippi river via the 20th avenue north bridge, it was necessary to strengthen the floor system of this bridge to carry the heavy street railway equipment. This was done, and the entire bridge was also replanked and paved with creosoted wood blocks.

The Superior avenue bridge over Brownie Lake was rebuilt. All material used was new, with the exception of the floor stringers which were taken from the old Plymouth avenue bridge, and which were in good condition.

New bridges were built by the Great Northern Railway and the Luce Lines over their tracks on Western avenue.

The old railroad grade crossing at Penn avenue and Bassett Creek near Chestnut avenue was eliminated by an overhead steel structure and wooden approach built by the Great Northern Railway Company.

A wooden trestle approach was built on California street northeast, connecting with the west approach of the Northern Pacific Railway bridge over their tracks at 33rd avenue northeast.

New concrete sidewalks were built on the Stone Arch bridge over the east channel of the Mississippi river.

First street and 6th avenue south over the Mill Company's canal was replanked and paved with creosoted wood blocks.

The Great Northern Railway commenced work on the west approach of the Broadway street bridge to Central avenue.

The total cost of bridge repairs was \$44,581.93.

1914

**THIRD AVENUE SOUTH BRIDGE.**

Borings were made for the piers near the break in the lime rock on the new location of the bridge, as adopted by the City Council in November, 1913, and ground was broken for the new bridge, January 12th at 3:00 P. M., at Main street and 1st avenue southeast.

The first and very important matter to be maintained in the construction of this bridge was the laying out of the proper working plan. Very little space was to be had at either end of the bridge, and it was only made possible through the courtesy of the Great Northern Railway on the east side, and the Rock Island Railway Company on the west side, that the proper operating plant could be established. Bins for sand and stone, as well as the cement warehouse, were constructed on the east side of the river—and the concrete mixers were also placed on that side. Stone and cement were delivered by the Railway Company over the sand and stone bins, and along the cement warehouse. A blacksmith shop and machine shop was also built on that side. On the west side a wood working mill was put up, together with large platforms for framing of old forms and wooden falseworks, so in short, all concrete would be handled from the east side—and all wood work from the west side.

By means of two Lidgerwood 2½-inch cableways placed 60 feet on centers between two towers, about 2,200 feet on centers, all material was handled. The cable towers are 165 feet high, and this height permitted the anchor cables to pass over the big warehouse of the Janney, Semple, Hill Company on the west side of the river, and the Lockwood-Upton Machine Company's building on the east side, and put in the anchorages right in the public streets without obstruction to traffic to a very great extent. The cableways were completed on August 17th.

By the end of the year, piers Nos. 2, 3, 4, 5, were completed, and the footing was completed for No. 6, and the coffer dam in place for No. 7. 7-inch Lackawanna steel sheeting was used in all the coffer dam work.

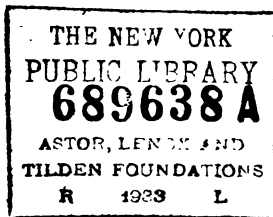
The total amount of money spent on the bridge for the year was \$239,329.55.

More or less trouble was experienced during the season with the Civil Service Commission, as well as with the unions; but everything was satisfactorily arranged, and the work progressed very well indeed after getting the organization picked, which meant the picking of first-class foremen, and the weeding out of incompetent men.

#### NINETEENTH AVENUE SOUTH BRIDGE.

During the year, the City Engineer was instructed to make a design for a concrete bridge at 19th avenue south, instead of the steel bridge which had been designed in 1912 and approved by the War Department; and to enable the department to make a proper design, it was necessary to find a location of bed rock in the river. This was accomplished in March, and a plan was prepared, the main features of which was two 300-foot spans of reinforced concrete, with approaches of arch design. The cost of this bridge was estimated to be \$418,000.00.





Minneapolis, Minn., January 30, 1914.

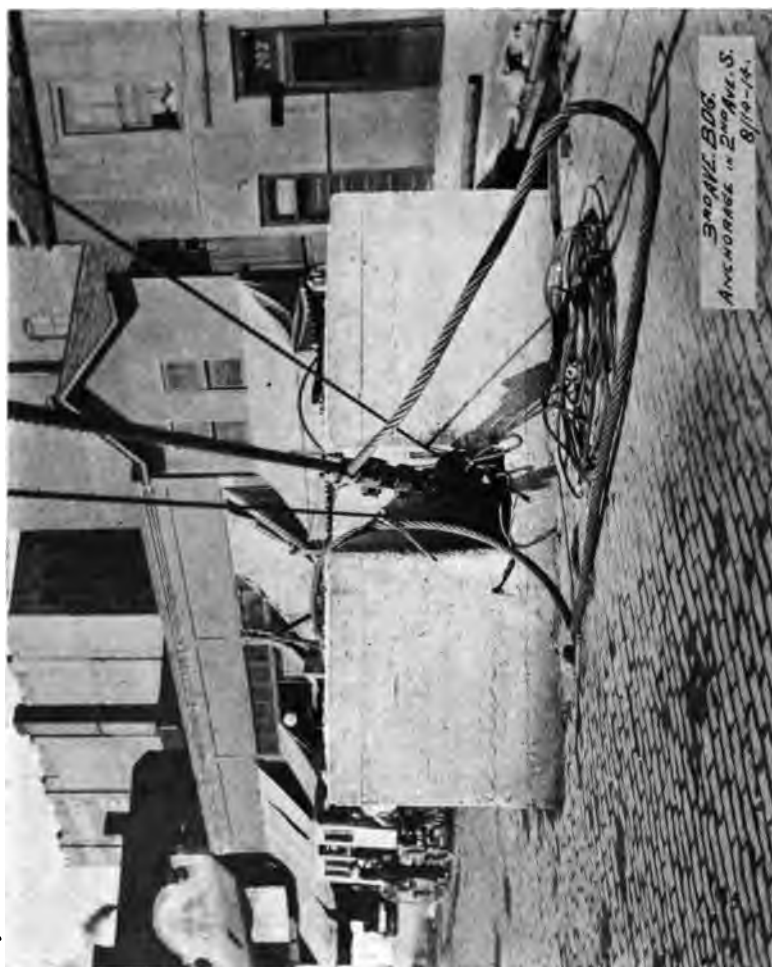
*The Honorable City Council.*

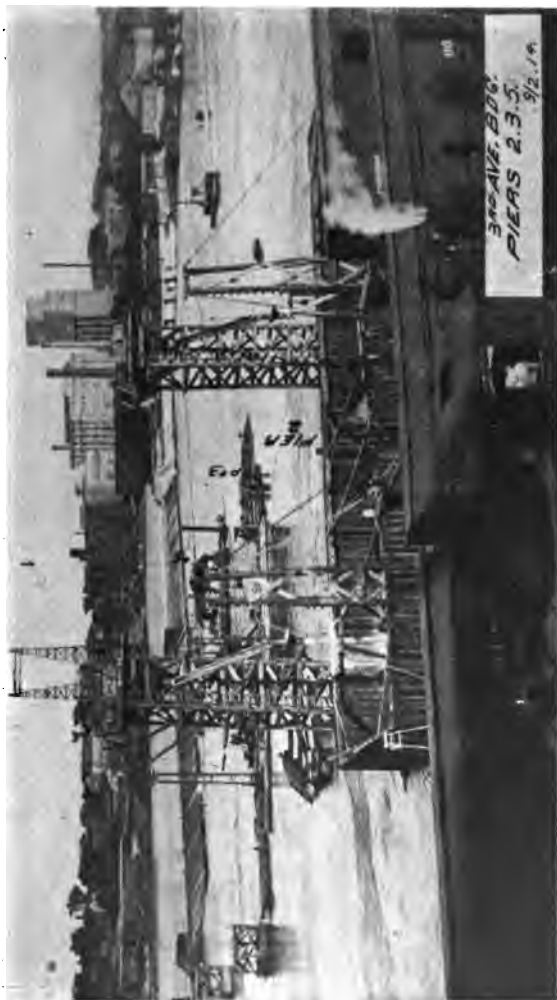
Gentlemen: I herewith submit the annual report of the work done under my direction for the year ending December 31st, 1914.

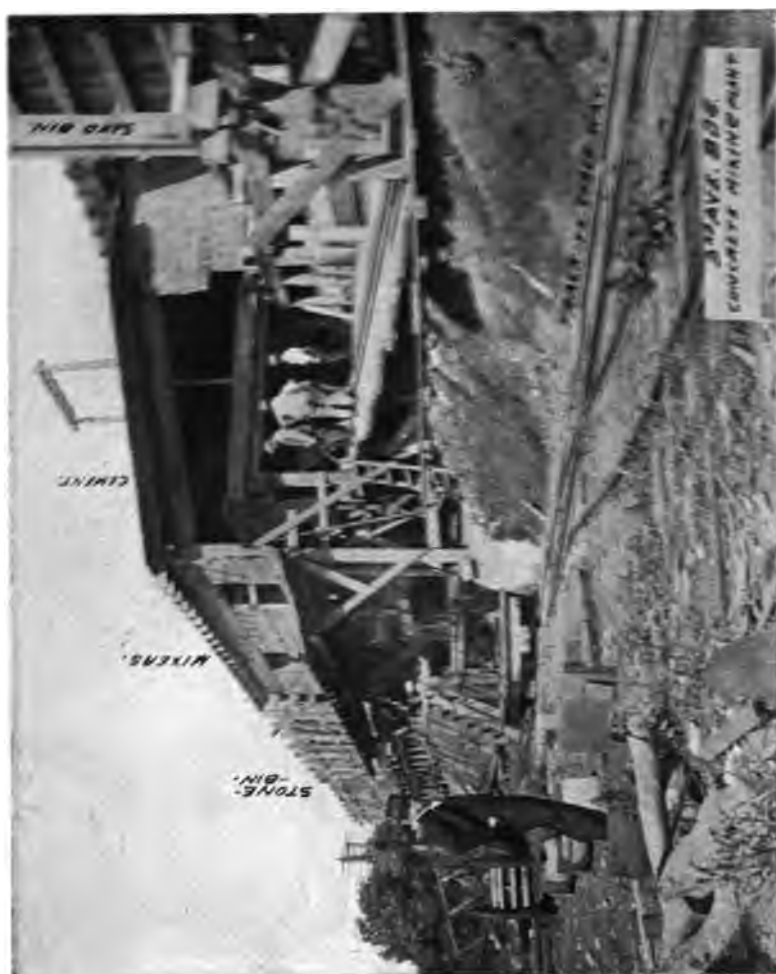
Respectfully submitted,

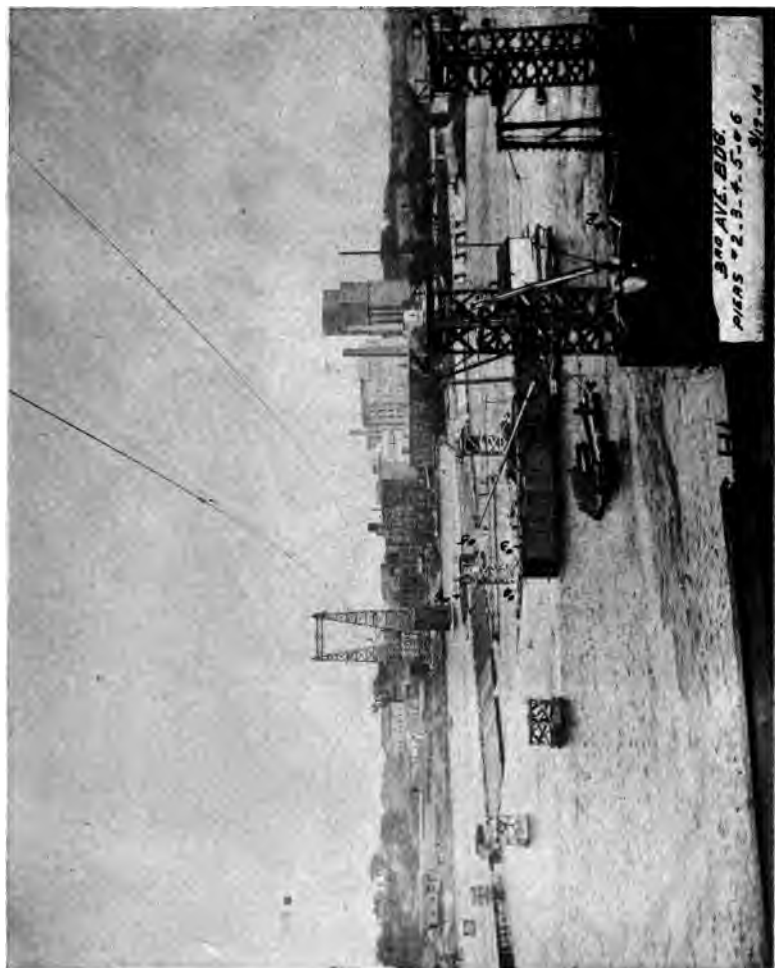
F. W. CAPPELEN,  
*City Engineer.*







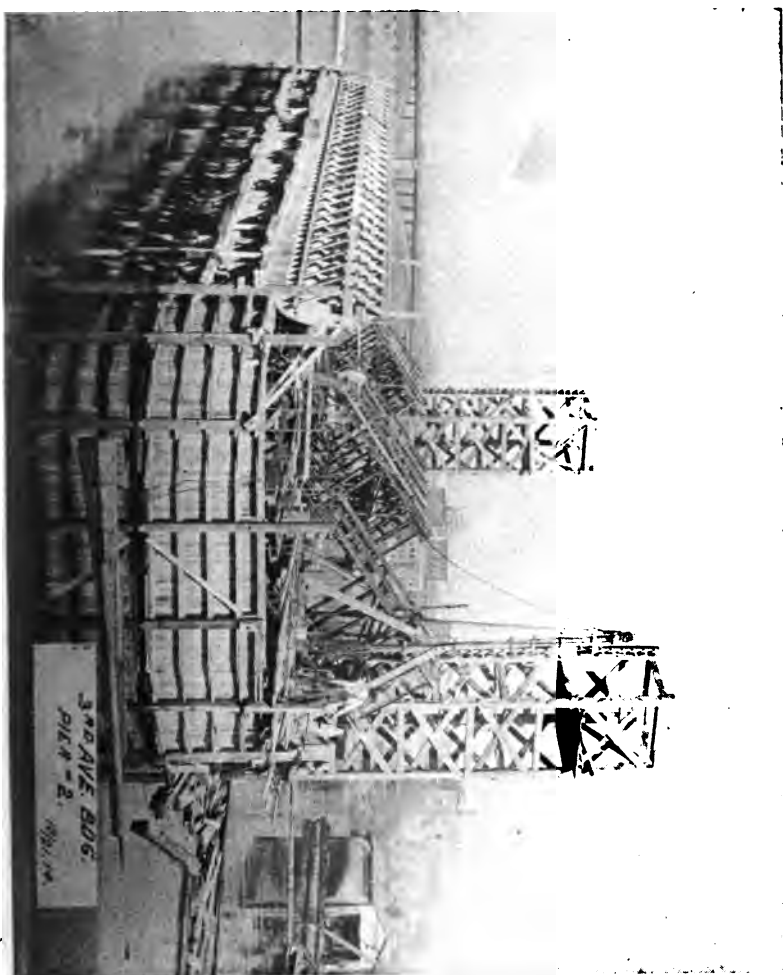




















1914

**GRADE SEPARATION.**

In September, 1913, an ordinance was passed ordering the Chicago, Milwaukee & St. Paul Railway Company to depress their tracks from 6th avenue south, to the company's yards in South Minneapolis, as well as their tracks crossing Lake street, and ordering the company to commence work within nine months.

A good many conferences were held between the city and the railroad, but nothing was accomplished—but in September, 1914, the C. M. & St. P. Railway Company started injunction proceedings against the city to prevent the city from compelling the railway company to comply with the ordinance.

Plans were also completed for the separation of grades of the Great Northern and Northern Pacific Railway Companies, on Arthur street southeast to 27th avenue northeast. Also for the Soo Line on Lowry avenue north and Lyndale avenue.

Plans were also made for depression of the Northern Pacific tracks at University avenue southeast and Oak street; involving also the complete separation of the C. M. & St. P. Railway Company's tracks in that vicinity.

In 1913, the Northern Pacific Railway Company asked the City Council to pass an ordinance granting the said railway company the right to build a line from the Great Northern depot on the west side of the Mississippi river and across the Mississippi river, Boom Island, and directly northerly through the 1st ward, indicating said line as an "Air Line" for the purpose of shortening up their running time of the passenger trains. This ordinance was delayed by the City Council, and in May, 1914, court proceedings were started by the railway company for permission to construct said air line in spite of the City Council's desire, and a verdict was made in favor of the railway company in December, 1914.

The work of depressing the H. & D. line continued during the year very rapidly, and the following bridges were built:

Harriet Avenue.  
Blaisdell Avenue.  
Nicollet Avenue.  
First Avenue South.  
Stevens Avenue.  
Second Avenue South.  
Third Avenue South.  
Clinton Avenue.

1914

**CREMATORY.**

A complete report of the operation of the crematory for the year ending December, 1913, was printed in the council proceedings under date of February 27th.

Although the crematory is in direct charge of the Department of Health, the City Engineer's Department is called upon to assist the Health Department in the proper operation of the crematory, and during the year certain changes were made in the construction of the furnaces; pre-heaters and forced draft systems were introduced to great advantage in the operation of the plant.

**MUNICIPAL UNION DEPOT.**

According to instructions given in November, 1913, by Your Honorable Body to prepare plans for a Union Railway Passenger Station for the City of Minneapolis, such plans were prepared after a

very careful study of the local situation, as well as study of union depots in other cities, such as Kansas City, Chicago, St. Louis and New York, and a report on that investigation was presented to Your Honorable Body during the year, and complete plans were finally presented to the City Council on December 11, 1914. These plans were adopted by the City Council the same date, and approved December 15th, by Mayor W. G. Nye.

At the same time the City Clerk was directed to submit to the Railway and Warehouse Commission of the State of Minnesota a duplicate set of the plans submitted, and the City Attorney was directed to appear before said Railway and Warehouse Commission, and to procure the necessary steps to be taken by the Railway and Warehouse Commission, as provided by law, and to procure approval of such steps and plans by said Railway and Warehouse Commission.

The estimated cost of the new union depot proper, was in round numbers, about \$16,000,000.

#### 1914

#### WATER WORKS DEPARTMENT.

According to your instructions to make a thorough examination of the Water Works Department in all its branches, and a physical valuation of the plant so as to establish a proper charge for the depreciation and interest with the object in view of putting it on a thorough business basis, I reported fully on May 8, 1914. As this report was printed in full in the City Council proceedings, and several thousand copies of the report was made in pamphlet form, I believe it unnecessary to repeat the report in these premises, as easy reference can be had to same as above outlined.

On the 31st day of July, 1914, Mr. J. A. Jensen, was appointed Supervisor of the Minneapolis Water Works.

#### PUMPING STATIONS.

The old stations Nos. 1 and 2 have been abandoned for some time, but all pipe connections to same were cut off from the main system, and the machinery sold.

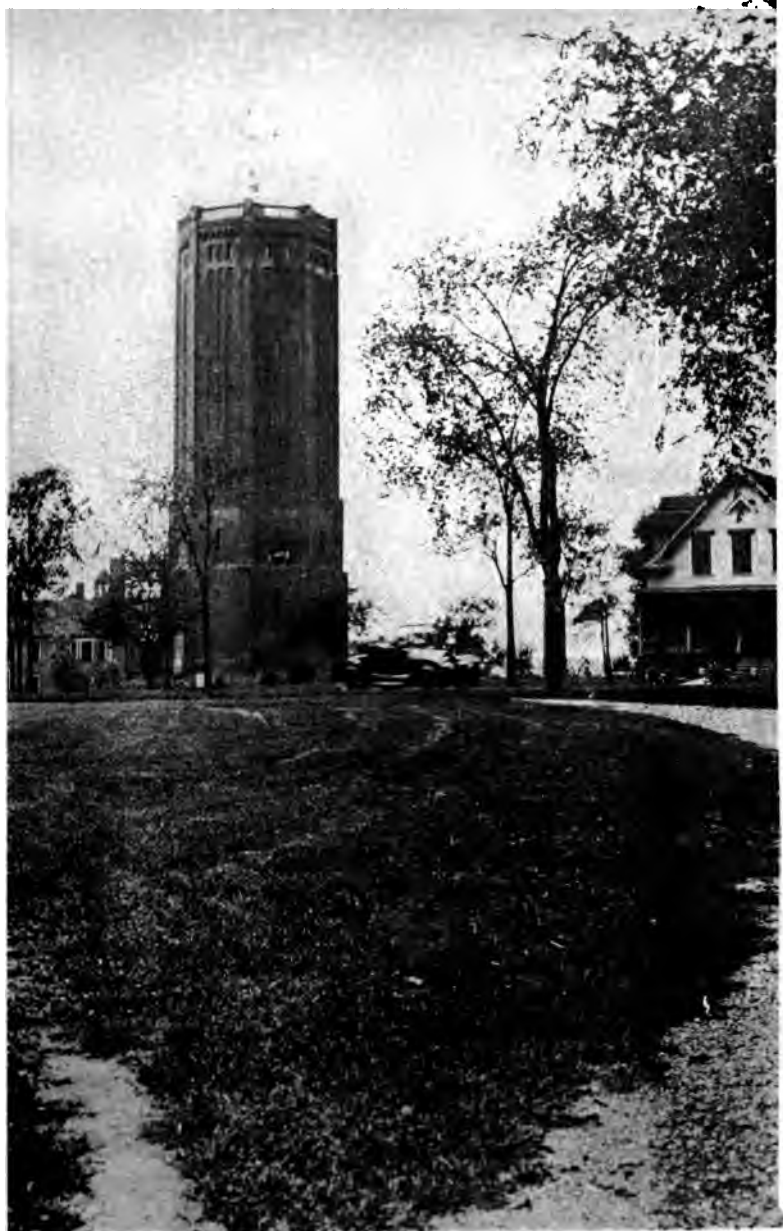
At the abandoned station No. 2, the city still has three primary and two secondary mill powers.

At the Camden Station, or the so-called Station No. 3, there are two 12,000,000 gallon Worthington High Duty steam pumps not in use, and the same are recommended to be scrapped. At this station we have one Worthington Electrically Driven Centrifugal Turbine pump of 20,000,000 gallons capacity.

At Station No. 4, so-called Northeast Station, we have two 15,000,000 gallon Triple Expansion Holly pumping engines, and one Electrically Driven Centrifugal pump of 20,000,000 gallons capacity, same as at Station No. 3.

Electric power is furnished by the General Electric Company at \$4.00 per million gallons, against a head of 240-feet, with a combined pumping and motor efficiency of 72 per cent. The total nominal capacity of the two operating stations is 70,000,000 gallons daily.

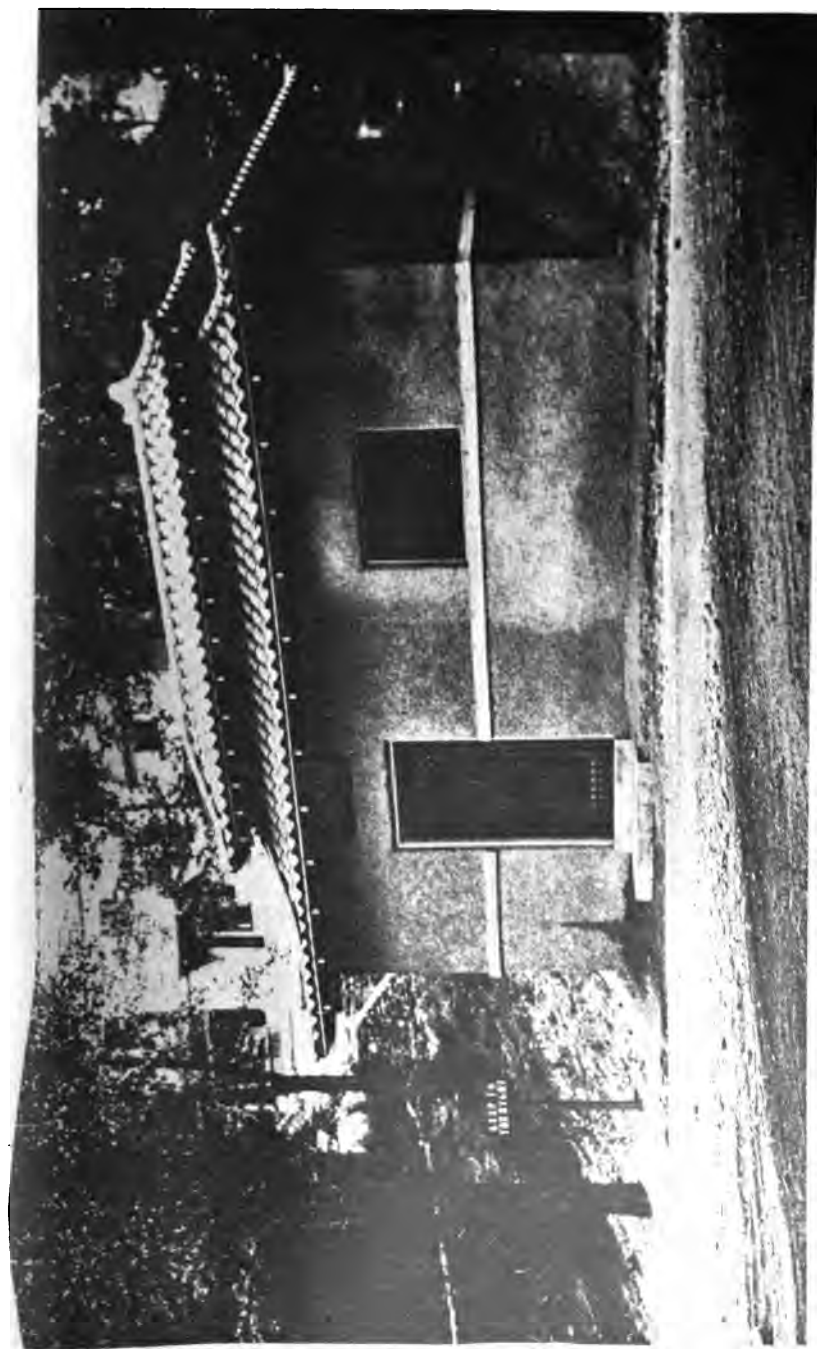
The completion of the two booster stations in Kenwood Park, also called the Lowry Hill stations, and the Prospect Park station, absolutely relieved the low pressure situation in these two districts, and by the completion of the 48-inch distribution main to 11th avenue southeast and 2nd street, the entire east Minneapolis needs no further attention, as far as the distribution system is concerned. The Washburn Park high district in Minneapolis proper, will be taken care of next year.



Kenwood Park Tower.



*Prospect Park Tower and Booster Station.*



Kenwood Park Booster Station.



## FILTRATION PLANT.

Original plant put in operation in 1913, consists of twelve mechanical filters, each of a normal capacity of three and one-half million gallons, with a maximum capacity of four million gallons per twenty-four hours; and two coagulation basins, each of 1.3 million gallons capacity. During the year, four additional filters and two coagulation basins, each of 1.5 million gallons, were added to the plant at a cost of \$79,800.08 for the filters and \$131,694.27 for the coagulation basins giving us a total maximum filter capacity of sixty-four million gallons.

## 1914 PUMPING DATA

Station No. 3. Centrifugal .....	1,903,590,000 gal.	20.74%
Station No. 4. Centrifugal .....	7,227,580,000 gal.	78.75%
Station No. 4. Steam .....	46,929,836 gal.	.51%
Total pumpage, 1914.....	9,178,099,836 gal.	100.00%

## FUEL USED.

Station No. 3. Banking .....	79.47 tons
Station No. 3. Greenhouses .....	13.62 tons
Station No. 4. Banking .....	484.10 tons
Station No. 4. Pumping .....	53.80 tons

## CENTRIFUGAL PUMP PERFORMANCE.

	Station No. 3.	Station No. 4.	Combined.
Running time, hours .....	2,174.0	7,481.5	9,655.5
Gallons pumped, M. G. ....	1,903.59	7,227.58	9,131.17
Average head, feet .....	256.84	253.57	255.11
Average efficiency, per cent....	66.4	72.2	69.27

## TOTAL PUMPING EXPENSE.

Repumping and park expense.....	\$3,299.58
Actual pumping expense.....	60,982.63
Total .....	\$64,282.21
Total gallons pumped.....	9,178,099,836
Average cost per million gallons.....	\$6.64
Average head .....	255.11
Cost per M. G. raised one foot.....	\$.026

## DETAIL COST OF ELECTRICAL PUMPING.

K. W. H. consumed, 1914.....	10,306,325
Total cost of electric power.....	\$39,361.88
Average cost per M. G. ....	\$4.30
Average head .....	255.21
Cost per M. G. raised one foot.....	.0168
Cost per K. W. H. ....	.0038
Number K. W. H. per M. G. to reservoir.....	1,128.0
Number K. W. H. per M. G. one foot high.....	44.1
Average pump efficiency, Station No. 3, per cent.....	66.4
Average pump efficiency, Station No. 4, per cent.....	72.2

## WATER MAINS.

## SUMMARY OF MAINS LAID IN 1914.

Crossings.	
6-inch pipe, feet.....	83,896.4
8-inch pipe, feet.....	17,894.0
12-inch pipe, feet.....	14,494.9
16-inch pipe, feet.....	1,217.8
Cost .....	117,503.1
36-inch pipe (charge to filter plant), feet.....	\$214,858.22
42-inch pipe (charge to filter plant), feet.....	161.0
48-inch pipe (steel), feet.....	43.0
60-inch pipe (charge to filter plant), feet.....	11,970.4
	360.0
Cost .....	12,534.4
Total feet .....	\$142,437.12
Total miles .....	130,087.5
	24.63

## SUMMARY OF ALL PIPE IN CITY, JANUARY 1, 1915.

6-inch pipe, feet.....	1,666,644.9
8-inch pipe, feet.....	427,593.9
10-inch pipe, feet.....	16,147.2
12-inch pipe, feet.....	366,285.6
16-inch pipe, feet.....	155,149.3
20-inch pipe, feet.....	3,100.0
24-inch pipe, feet.....	108,135.3
30-inch pipe, feet.....	9,845.1
34-inch pipe, feet.....	15.8
36-inch pipe, feet.....	44,065.9
42-inch pipe, feet.....	4,976.5
48-inch pipe, feet.....	30,366.2
50-inch pipe, feet.....	33,564.4
54-inch pipe, feet.....	15,632.2
60-inch pipe, feet.....	402.9
Total feet .....	2,881,925.2
Total miles .....	545.82

## NUMBER OF GATES AND HYDRANTS SET IN 1914

Hydrants .....	154
6-inch gates .....	258
8-inch gates .....	45
12-inch gates .....	29
16-inch gates .....	1
48-inch gates .....	4

## TOTAL HYDRANTS AND GATES IN SYSTEM.

Hydrants .....	5,341
6-inch gates .....	3,586
8-inch gates .....	662
10-inch gates .....	30
12-inch gates .....	468
16-inch gates .....	182
20-inch gates .....	7
24-inch gates .....	136
30-inch gates .....	6
34-inch gates .....	1
36-inch gates .....	27
40-inch gates .....	5
42-inch gates .....	6
48-inch gates .....	32
50-inch gates .....	1
54-inch gates .....	4
Total gates .....	5,162

## GATES AT RESERVOIR.

12-inch gates .....	4
36-inch gates .....	7
42-inch gates .....	6
48-inch gates .....	3
60-inch gates .....	2
Number water troughs.....	22
Number watering posts.....	9
Number winter sprinkling standpipes.....	20
Number summer sprinkling standpipes.....	294
Total standpipes .....	382
Total standpipes .....	676

## WATER CONNECTIONS.

Total number of taps in use.....	54,652
Total number of meters in use.....	50,441
That portion of the 48-inch steel distribution main laid in 1914 was located as follows:	

	Feet.	Cost.
In Lowry Ave. from Polk St. to Lincoln St.....	1,854.5	\$21,404.91
In Lincoln St. from Division St. to Lowry Ave.....	7,892.7	93,893.47
In Division St. from Lincoln St. to Ulysses St.....	644.1	8,751.74
In Eleventh Ave. S. E. from G. N. Ry. to Division St.....	1,579.1	18,387.00
Totals .....	11,970.4	\$142,437.12

**Prospect Park Tower.**

The Tower enclosing the Prospect Park water tank was begun late in 1913 and the work carried through the winter the work being completed early in 1914. The cost was as follows:

Labor .....	\$3,084.05
Material .....	6,977.55
Total cost .....	\$10,041.60

**54-inch Force Main.**

Header connections and all cross-over connections on line were completed and the force main was put into service March 31, 1914.

**WATER MAIN CROSSINGS AT THE H. & D. TRACKS OF THE C. M. & ST. P. RY., 1914.**

Pipe laid under the track:	
Garfield Ave., 12-inch crossing, 170.0 feet.....	\$1,600.44
Mains lowered, hydrants and gates reset:	
4th Ave. S., 50 feet new pipe and 335 feet old 6-inch pipe.....	1,414.24
5th Ave. S., 440 feet old 6-inch pipe.....	1,150.39
Mains cut off, hydrants moved and gates set in advance of the track excavation:	
Portland Ave., 12-inch pipe.....	\$395.41
Clinton Ave., 6-inch pipe.....	329.35
Oakland Ave., 6-inch pipe.....	215.43
Park Ave., 6-inch pipe.....	180.01
Columbus Ave., 6-inch pipe.....	139.84
Chicago Ave., 8-inch pipe.....	258.28
Elkhott Ave., 6-inch pipe.....	132.50
10th Ave. S., 6-inch pipe.....	107.90
11th Ave. S., 12-inch pipe.....	152.85
12th Ave. S., 6-inch pipe.....	101.34
13th Ave. S., 6-inch pipe.....	101.18
14th Ave. S., 8-inch pipe.....	120.15
15th Ave. S., 6-inch pipe.....	207.05
Bloomington Ave., 8-inch pipe.....	235.17
16th Ave. S., 6-inch pipe.....	180.69
17th Ave. S., 8-inch pipe.....	174.00

**1913.**

These pipes were laid under the bridges at the following bridges requiring deep excavation at both ends:

Fremont Ave. S., at 29th St., 6 inch pipe.....	\$1,402.66
Emerson Ave. S., at 29th St., 6-inch pipe.....	1,397.58
Dupont Ave. S., at 29th St., 8-inch pipe.....	1,627.04
Colfax Ave. S., at 29th St., 6-inch pipe.....	1,559.97
Lyndale Ave. S., at 29th St., 8-inch pipe.....	1,425.52



Open Coagulant Piping, 4-inch Cast Iron Pipe.



Main Gallery—Filter Plant



Minneapolis Water Works Department, Purification Division, Bacteriological Laboratory.

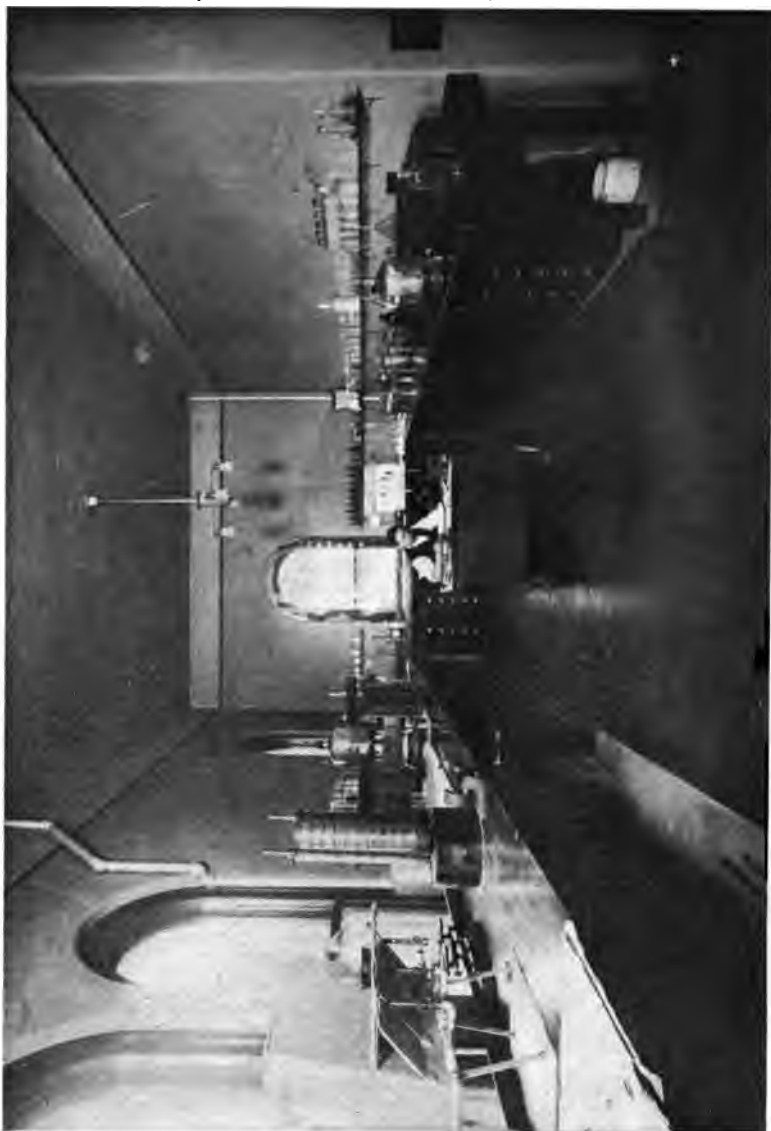


Main Gallery—Filter Plant

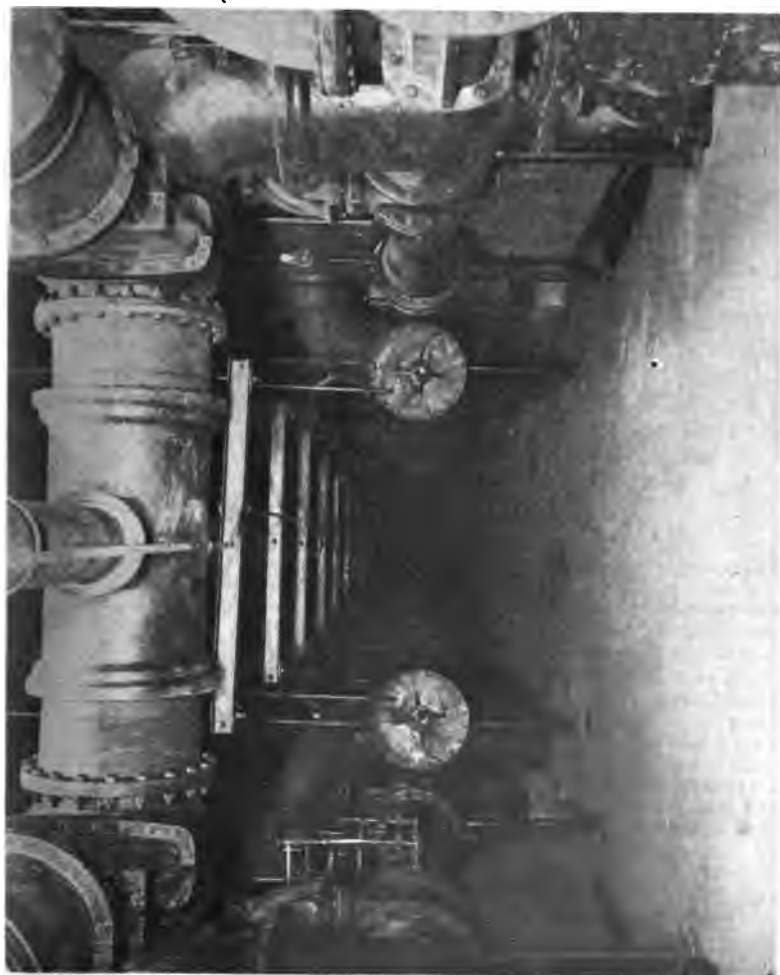


Minneapolis Water Works Department, Purification Division, Bacteriological Laboratory.





Minneapolis Water Works Department, Purification Division, Chemical Laboratory.



Pipe Gallery.

1914

**WATER WORKS—FILTRATION DATA.**

The following tables give at glance, a condensed resume of the filtration work complete for 1914, and as many of similar data as we had on hand for 1913, so a good comparison is available.

Table No. 1—Shows amount of water filtered; rate of filtration; wash water; chemicals used; fuel and electric energy used.

Table No. 2—Cost data.

Table No. 3—Blank.

Table No. 4—Routine chemical laboratory tests; Odor; Turbidity; Color; Alkalinity, etc.

Table No. 5—Sanitary chemical data.

Table No. 6—Analysis of mineral residues.

Table No. 7—Bacteriological data.

Table No. 8—Bacteriological data; B' Coli Determinations.

Table No. 9—Microscopical Examinations.

Table No. 10—Typhoid Fever statistics.

Table No. 11—Comparison of color in river water with precipitation data.

Table No. 12—Relation of amount of water filtered, to precipitation and temperature data.

Table No. 13—Reduction in color per grain of alum.

Chart No. 1—Typhoid Fever Chart.

**LABORATORY DATA.**

I wish to call your attention especially to a few of the analytical results. It will be noticed in Table No. 4, that the maximum color of the raw water in 1914 was 130 parts per million, as compared with a maximum of 108 in 1913. It is interesting also to note the similarity in the average data for the two years, wherever the full data are available.

The bacteriological data as given in Tables 7 and 8, are more complete for 1914, than for 1913. An aftergrowth of non-pathogenic bacteria occurred in the clear water storage reservoir in April and May 1914, as shown in the results under the headings "Distribution Main" and "City Taps" (Table No. 7). The average number of bacteria per cubic centimeter growing on gelatine, was high for these two months, whereas, the colony counts on agar were low and colon bacilli were entirely absent. Such growths occasionally occur in waters treated with hypochlorite and do not effect the hygienic quality of the water. The averages for the year were much increased by the high gelatine counts for April and May.

Table No. 11 shows the effect that the rainfall on the Mississippi Water Shed, had upon the color of the river water at Minneapolis, during the years 1913 and 1914.

1914

**OPERATION DATA.**

It is shown in Table 1 that the average rate of filtration, and the average number of filters in service, were the same for both 1913 and 1914. The period of service of the filters between washings, was 13½ hours in 1913, as compared with 24½ hours in 1914; whereas, the wash water averaged 3 per cent in the former year, and 4 per cent in the latter. The increase in the wash water was partly due to the

installation of a wash water meter late in 1913, whereas, previously the amount had been estimated. Moreover the amount of wash water was purposely increased in 1914, for the reason that the continued breaking of the strainer plates allowed sand to accumulate in the underdrains and mud balls were formed in the sand so that the filters did not wash well under the former pressure. The high percentage of wash water used in May, June and July 1914, was due also in part, to the presence in the coagulation basins and in the water on the filters of organisms known as Daphne. These organisms clogged the filters very rapidly and necessitated frequent washings. The amount of water filtered in 1914 was less than the amount in 1913, even though the 1913 records lack the first 10 days in January, as the filtration plant was not put into service until January 10, 1913. This is accounted for, by much heavier rainfall in 1914, than in 1913 (See Table 12).

The amount of alum used, per gallon of water, was 10 per cent less in 1914 than in 1913; on account of using the new coagulation basins finished in June, 1914. (See Table 13).

#### COST DATA.

The total cost per million gallons of purifying the water in 1914 is \$9.40; as compared with \$9.18 in 1913. When however, we deduct the charge of \$0.21 per million gallons, for new machinery and equipment installed in 1914, we have a net total of \$9.19, practically the same cost per million gallons as in 1913. The cost of filtration in 1914, as compared with cost in 1913, on 1913 conditions, was really lower—as wages of all operators were increased, and also cost of chemicals.

#### NEW MACHINERY AND EQUIPMENT.

It was decided that the floor of the wash water tank at elevation 323, would make an excellent place for a machine shop. A 16-inch lathe, 26-inch drill press, and a 5 h. p., motor have been purchased and installed, together with suitable cupboards and miscellaneous small equipment so that we are now prepared to do a large part of the machine shop work found necessary at the filtration plant. In this shop, a valve opening device for street service, designed by Mr. Bring, machinist at the plant, was built, which has worked well on a 60-inch gate at the filtration plant. The device was installed on an old worn out auto truck received from the water works yard.

A new transformer was installed at the filtration plant by the City of Minneapolis during 1914, because the temporary transformers installed by the electric company were not satisfactory.

An induced draft fan was placed in the boiler room late in 1914, and this has corrected the conditions formerly due to poor draft, and the results are highly satisfactory.

A manometer was purchased from the Builders Iron Foundry, for the purpose of checking the records of the Venturi meters. It has already proven its value for the purpose.

#### 1914

#### ADDITIONS TO THE FILTRATION PLANT.

Two new coagulations basins and four additional filters with connections were designed and built during 1913 and 1914; Mr. W. N. Jones, Engineer in charge. The coagulation basins were put in service in June, 1914, and the first of the new filters in December of the same year. The filtration plant now has a normal capacity of 53

million gallons per day, and a maximum capacity of 64 million gallons.

When the new coagulation basins were built, it was necessary to install an entirely new alum feed line. An open pipe line of cast iron pipe, painted well with asphalt, was installed. The open coagulant feed pipe has proven to be far more satisfactory than a closed pipe, and has minimized the troubles formerly experienced with clogging and corrosion. The open pipe can be easily cleaned and painted when necessary. As far as is known, no other filtration plant uses open coagulant pipes.

#### GROUNDS.

The grounds around the filtration plant have received very little attention the past year, because of the construction work that has been carried on. However, the fence around the reservoir was carefully scraped and given a much needed coat of paint. During 1915, unless there is further construction work, it would seem to me, desirable to improve the appearance of the grounds about the plant and the superintendent's residence, by suitable landscape gardening. The entire plant should be made as attractive as possible, because of the many visitors.

#### FILTER REPAIRS.

Repairs to the original 12 filters found necessary in 1913, have been continued through 1914. Supervision of the work was turned over to Mr. W. N. Jones, on March 16, 1914. Failures similar to those of the metal used in the plates and bolts of the filters have occurred at other places, notably, Evanston, Ill., and New York City. The cause of the failures has not yet been satisfactorily determined. Annealing of the cold worked metal seems to have decreased the number of failures of the metal in our own filters.

#### STERILIZATION OF NEW DISTRIBUTION MAINS.

The new 48-inch distribution main laid in 1914 was thoroughly sterilized by means of hypochlorite of lime, before it was put in service. It is not known that this precaution is taken in other cities but it seems to be advisable, especially in the case of large pipes through which a high velocity cannot be obtained when flushing them.

TABLE NO. 1  
WATER WORKS DEPARTMENT—PURIFICATION DIVISION

FILTERS					CHEMICALS USED										Electric Energy Used K.W.H.	
Rate of Filtration Mill. Gals. 24 Hours	No. of Filters in Service	Period Between Washing Hours	Number of Filters Washed	Loss of Head Feet	Water Filtered Gallons		Wash Water		Coagulant		Lime		Chlorine			Fuel Used Pounds
					Total	Net	Gallons	Per Cent	Pounds	Grains Per Gal.	Pounds	Grains Per Gal.	Pounds	Grains Per Gal.		
1913																
Max. daily					45,817,000	44,452,000	1,218,000	6.3	34,417	8.11						
Min. daily					14,704,000	14,192,000	170,000	0.7	1,396	0.39						
Aver. daily	3½	9	13½		25,889,000	25,114,000	775,000	3.0	12,820	3.47						
Total					9,294,198,000	9,015,907,000	278,291,000		4,602,517					4210,652		268,362
1914																
Max. daily					44,949,000	42,462,000	2,860,000	99.8	39,750	9.36						
Min. daily					10,256,000	9,682,000		0.0	1,400	0.50						
Aver. daily	3½	9	24½		25,139,000	24,129,000	1,010,000	4.0	11,175	3.11						
Total					9,175,940,000	8,906,942,000	368,998,000		4,078,783					4199,544		245,210

Note: \*Hypochlorite of Lime.

•High wash-water due to micro-organisms.

TABLE NO. 2  
WATER WORKS DEPARTMENT—PURIFICATION DIVISION

COST OF PURIFICATION													
		Coagu- lant	Lime	Chlorine	Fuel	Electric Energy	Wash Water	Supervision and Office		Laboratory		Operation	
								Wages	Supplies	Wages	Supplies	Wages	Supplies
1913	Total	43,263.65	.....	3,328.24	1,567.26	3,170.74	5,566.65	2,960.00	.....	3,480.00	.....	17,098.50	4,901.24
	Per Mill. Gals.	4.66	.....	0.36	0.17	0.34	0.60	0.32	.....	0.38	.....	1.84	0.53
1914	Total	37,746.62	.....	3,165.87	1,835.86	3,060.85	7,377.96	3,628.64	120.23	3,480.00	1,067.49	18,125.35	1,234.96
	Per Mill. Gals.	4.11	.....	0.35	0.20	0.33	0.80	0.40	0.01	0.38	0.12	1.98	0.14

TABLE NO. 2—Continued  
WATER WORKS DEPARTMENT—PURIFICATION DIVISION

	COST OF PURIFICATION						Credits	Interest and Depreciation	Total Net Cost		
	New Machinery and Equipment		Total Purification Cost		Maintenance and Repairs					Total Cost	
	Wages	Supplies	Wages	Supplies	Wages	Supplies				Wages	Supplies
1913											
Total									85,336.28		
Per Mill. Gals.									9.18		
1914											
Total	126.13	1,876.48	25,358.12	57,486.32	1,811.75	2,252.84	27,169.87	59,739.16	641.65		
Per Mill. Gals.	0.01	0.20	2.76	6.26	0.20	0.25	2.96	6.51	0.07		
									86,207.38		
									9.40		



TABLE NO. 4  
WATER WORKS DEPARTMENT—PURIFICATION DIVISION

SUMMARY OF ROUTINE CHEMICAL LABORATORY TESTS

Descriptive	Parts per Million																				
	Temp. Co		Turbidity	Color	Alkalinity as Ca CO <sub>3</sub>				Incrustants as Ca CO <sub>3</sub>	Total Hardness as Ca CO <sub>3</sub>	Magnesium as Ca CO <sub>3</sub>	Carbonic Acid as CO <sub>2</sub>	Residual Chlorine								
					Phenolphthalein	Erythrosine	R.	W.						S.B.	C.E.						
	S.B.	C.E.	S.B.	C.E.	R.	W.	S.B.	C.E.	R.	W.	S.B.	C.E.	R.	W.	S.B.	C.E.	D.M.				
1913																					
Max. daily.....	M.	0	27.5	27.5	30	20	0	108	102	43	198	224	219	208	248	252	5	9.5	36	180	.....
Min. daily.....	0	0	8	1	0	10	0	38	11	4	129	106	76	135	118	114	0	0	1.5	000	.....
Aver. daily.....	0	0	11.0	11.4	18	8	0	59	45	18	153	163	137	161	172	179	0	1.5	13	030	.....
No. of samples.....	346	346	344	346	194	345	354	193	351	471	195	340	347	41	57	63	182	314	323	350	0
1914																					
Max. daily.....	F.M.	0	27.5	26	90	30	0	130	118	48	222	220	214	235	232	233	8	8	39	095	023
Min. daily.....	0	0	5	1	3	2	0	19	19	11	100	111	51	107	115	84	0	0	4	Tr.	000
Aver. daily.....	0	0	10.6	11	17	10	0	49	46	17	162	162	140	169	169	169	1.3	1.3	13	033	004
No. of samples.....	365	365	364	362	322	364	720	322	364	365	322	364	364	51	63	69	322	364	364	732	339

Note: R.W.—River water from force main.

S.B.—Sedimentation basin.

C.E.—Combined filter effluent.

D.M.—Filtered water from distribution main.

M.—Marshy.

F.M.—Faint marshy.

Tr.—Trace only.

TABLE NO. 5  
WATER WORKS DEPARTMENT—PURIFICATION DIVISION  
SUMMARY OF SANITARY CHEMICAL DATA (PARTS PER MILLION)

	Mineral Residue						Chlorides												Nitrogen as Free Ammonia				Nitrogen as huminoid Ammonia				Nitrogen as Nitrites				Nitrogen as Nitrates				Oxygen Consumed		Dissolved Oxygen	
	Total		Non-Volatile		Volatile																																	
S.B.	C.E.	S.B.	C.E.	S.B.	C.E.	S.B.	C.E.	R.W.	S.B.	C.E.	S.B.	C.E.	S.B.	C.E.	S.B.	C.E.	S.B.	C.E.	S.B.	C.E.	S.B.	C.E.	S.B.	C.E.	S.B.	C.E.	S.B.	C.E.	S.B.	C.E.	S.B.	C.E.						
1913																																						
Max.....	246	251	144	145	102	106	2.8	2.9	.098	.060	.400	.296	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.					
Min.....	189	194	97	109	82	71	0.9	1.6	.033	.019	.175	.115	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.					
Aver.....	208	210	115	128	91	80	1.5	2.1	.058	.032	.292	.193	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.					
No. of Samples.....	16	13	16	13	16	13	17	17	16	16	9	9	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16					
1914																																						
Max.....	240	240	139	141	103	105	2.5	3.8	.115	.108	.353	.205	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.					
Min.....	187	191	99	115	82	71	1.5	2.5	.011	.015	.214	.152	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.					
Aver.....	204	211	118	127	92	84	2.0	3.2	.043	.041	.270	.186	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.					
No. of Samples.....	29	29	29	29	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30					

Note: R.W.—River Water from force main.

S.B.—Sedimentation basin.

C.E.—Combined filter effluent.

Tr.—Trace only.





TABLE NO. 7  
WATER WORKS DEPARTMENT—PURIFICATION DIVISION

BACTERIOLOGICAL DATA																
COLONY COUNTS ON AGAR AT 37° AND GELATINE AT 20° C.																
	Raw Water		Settling Basin		Coag. Basin		Infl. to Filters		Effl. From Filters		Effl. From Plant		Distribution Main		City Taps	
	Agar	Gel.	Agar	Gel.	Agar	Gel.	Agar	Gel.	Agar	Gel.	Agar	Gel.	Agar	Gel.	Agar	Gel.
1913																
Max.	2,300	10,000	1,200	5,400	900		650				130	150	11	210	800	4,500
Min.	70	125	8	120	3		2				0	1	1	3	0	1
Aver.	645	1,565	240	395	155		85				7	11	4	24	80	215
No. of samples	196	194	599	381	599		337				599	380	36	35	341	339
1914																
Max.	2,700	5,300	1,000	8,800	1,500		1,700		2,200		155	160	170	113,500	150	111,000
Min.	55	250	40	150	20		4		3		0	1	0	1	2	2
Aver.	510	1,000	255	790	155		120		135		12	11	14	200	16	310
No. of samples	322	322	730	365	728		586		542		730	365	337	337	87	83

†Aftergrowths in clear water reservoir.

TABLE NO. 8  
BACTERIOLOGICAL DATA  
B. COLI DETERMINATION (PERCENTAGE OF TOTAL NUMBER OF TESTS POSITIVE)

	River Water						Settling Basin				Coag. Basins				Influent to Filters				Eff. from Filters				C. E.		D.M.		City Taps																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
	10 C.	1 C.	1/10 C.	1/100 C.	10 C.	1 C.	1/10 C.	1/100 C.	10 C.	1 C.	1/10 C.	1/100 C.	10 C.	1 C.	1/10 C.	1/100 C.	10 C.	1 C.	1/10 C.	1/100 C.	10 C.	1 C.	1/10 C.	1/100 C.	10 C.	1 C.	1/10 C.	1/100 C.	10 C.	1 C.	1/10 C.	1/100 C.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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Notes: City tap samples largely from "dead ends."

C.E.—Filter Plant effluent.

D.M.—Distribution main.

TABLE NO. 9  
WATERWORKS DEPARTMENT—PURIFICATION DIVISION  
SUMMARY OF MICROSCOPICAL EXAMINATIONS

	DIATOMACEAE										CHLOROPHYCEAE										Protozoa	Rosa-fera	Amorphomat	Total	
	Nautula No. per C. C.	Cyclotella No. per C. C.	Nitzschia No. per C. C.	Eucyrtoneura No. per C. C.	Caecomonas No. per C. C.	Asterionella No. per C. C.	Synedra No. per C. C.	Coconeis No. per C. C.	Stephanodiscus No. per C. C.	Helosira No. per C. C.	Fragilaria No. per C. C.	Stenodiscus No. per C. C.	Protophycus No. per C. C.	Conditia No. per C. C.	Raphidium No. per C. C.	Sporogiro No. per C. C.	Pediastrum No. per C. C.	Chellaria No. per C. C.	Anabaena No. per C. C.	Diatryon No. per C. C.					Euglena No. per C. C.
1913																									
Max.	214	1285	473	56	42	82	18	46	14	8	2	50	38	22	36	12	4	5	0	0	15	Pr.	38	340	
Min.	120	40	0	12	8	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	176	
Aver.	178	691	240	39	28	32	19	15	4	4	3	13	19	3	10	2	1	2	0	0	10	12	245	1297	640
Present in samples.	10	10	9	10	10	8	10	10	9	6	3	8	8	4	8	2	7	4	4	0	8	0	8	10	10
1914																									
Max.	138	2479	459	58	39	85	12	24	15	31	5	35	18	38	18	14	5	12	2	31	1	2	26	520	
Min.	40	40	6	4	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
Aver.	104	698	101	23	29	16	6	8	6	8	2	14	6	9	7	3	1	4	1	9	1	1	10	290	1070
Present in samples.	35	35	35	34	35	33	34	34	34	33	19	33	33	24	31	20	10	27	10	29	13	12	33	35	35

**TABLE 10**  
**TYPHOID FEVER STATISTICS, SUPPLIED BY MINNEAPOLIS HEALTH DEPT.**

Year	Number of Typhoid Cases	Number of Typhoid Deaths	Death Rate per 100,000 Population	Remarks
1900 . . . . .	376	79	38	
1901 . . . . .	630	121	58	
1902 . . . . .	320	66	29	
1903 . . . . .	720	95	39	
1904 . . . . .	738	103	41	
1905 . . . . .	269	62	23	
1906 . . . . .	252	97	34	
1907 . . . . .	181	77	26	
1908 . . . . .	104	51	17	
1909 . . . . .	95	59	19	
1910 . . . . .	1,252	173	57	Chlorination begun Feb. 1910.
1911 . . . . .	299	36	11	
1912 . . . . .	186	37	11	
1913 . . . . .	136	41	12	Filter Plant in operation Jan. 10, 1913.
1914 . . . . .	278	38	12	Population 343,460.



TABLE NO. 11  
COMPARISON OF COLOR IN RIVER WATER AT MINNEAPOLIS WITH AVERAGE MONTHLY PRECIPITATION  
ON MISSISSIPPI RIVER WATERSHED ABOVE MINNEAPOLIS †

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Summary
1913													
Average Precipitation.....	0.32	0.36	1.11	2.00	3.07	3.03	7.18	1.57	3.63	3.12	0.48	0.02	25.89
Color.....													
Max.....	17	17	38	41	51	59	108	93	71	61	50	42	108
Min.....	11	14	17	28	29	50	48	55	48	49	38	38	11
Aver.....	14	16	25	33	43	55	76	74	58	63	45	40	47
1914													
Average Precipitation.....	0.74	0.43	1.14	2.45	2.43	8.36	2.56	5.51	3.67	1.81	0.41	0.18	29.71
Color.....													
Max.....	68	23	26	42	81	1.30	124	75	60	55	40	30	130
Min.....	23	19	20	37	42	58	75	40	32	38	31	25	19
Aver.....	29	20	22	39	64	99	91	53	42	45	34	27	49

Note: †Precipitation data from U. S. Weather Bureau for stations at Bemidji, Cass Lake, Brainerd, St. Cloud and Minneapolis.

TABLE NO. 12  
 WATERWORKS DEPARTMENT—PURIFICATION DIVISION  
 RELATION OF AMOUNT OF WATER FILTERED (MILLION GALLONS) TO PRECIPITATION AND TEMPERATURE  
 DATA AT MINNEAPOLIS

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Summary
Normal Precipitation	0.69	0.76	1.65	2.44	3.92	4.01	3.81	3.69	3.66	2.58	1.18	0.95	29.34
Normal Temperature	13.7	15.1	29.4	49.6	57.3	67.2	72.1	69.6	62.0	49.7	33.0	20.1	44.6
1913													
Precip. . . . .	0.42	0.74	1.65	1.86	2.86	2.21	7.75	1.40	4.12	2.55	0.48	0.05	26.09
Temp. F. . . . .	13.0	12.7	25.7	49.0	55.8	70.5	70.4	72.8	61.4	46.4	40.2	30.4	45.7
Water Filtered													
Total . . . . .	568,585	674,858	679,159	673,199	703,525	1,072,735	887,488	1,007,002	829,899	786,337	681,982	649,429	9,294,198
Daily Aver. . . . .	26,601	24,102	21,908	22,440	25,275	35,758	28,635	32,485	27,663	25,366	22,733	20,949	26,218
Max. Daily . . . . .	25,821	26,425	25,916	26,146	30,473	45,817	39,069	41,768	37,506	31,430	24,770	29,266	45,817
1914													
Precip. . . . .	0.83	0.45	0.98	3.69	1.80	8.63	1.17	8.70	2.76	1.58	0.19	0.37	31.15
Temp. F. . . . .	21.4	7.6	30.6	44.7	60.4	66.8	75.1	69.2	62.4	55.4	36.0	12.2	45.2
Water Filtered													
Total . . . . .	656,574	610,644	705,849	678,582	816,267	772,499	1,052,907	873,375	769,077	763,172	721,946	754,948	9,175,840
Daily Aver. . . . .	21,148	21,809	22,770	22,620	26,331	25,750	33,965	28,173	25,636	24,619	24,065	24,353	25,413
Max Daily . . . . .	23,290	26,033	26,706	26,824	33,069	34,773	44,949	38,557	29,622	30,138	26,770	28,759	44,949

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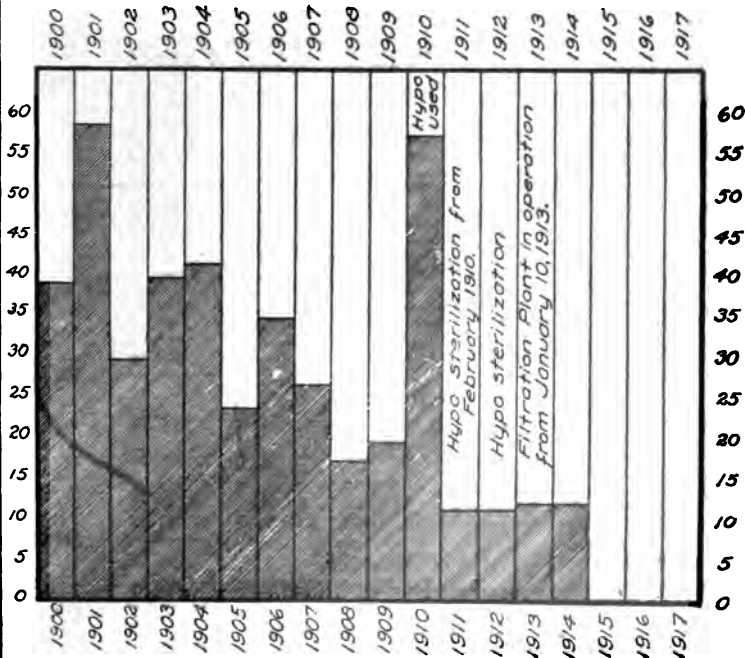
**TABLE 13**  
**REDUCTION IN COLOR PER GRAIN OF ALUM**

Year	Alum Grains per Gallon	Color Settling Basin p. p. mil.	Color Clear Well p. p. mil.	Reduction in Color Parts per Million	Reduction in Color per Grain of Alum	Number of Coagulation Basins in Service
<b>1913:</b>						
Maximum.....	5.62	70	29	46	14	2
Minimum.....	0.68	14	6	8	7	2
Average.....	3.47	45	18	27	8	2
<b>1914:</b>						
Maximum.....	6.63	91	26	65	13	4
Minimum.....	0.70	20	14	6	7	2
Average.....	3.11	46	17	29	9	3

CHART I.  
**CITY OF MINNEAPOLIS**  
 WATER WORKS DEPARTMENT.  
 PURIFICATION DIVISION.

F.V. Cappelen, City Eng.  
 L.I. Birdsell, Supt. Purif. Div.

*Typhoid Fever Death Rate per 100,000  
 City of Minneapolis.*



**TABLE NO. 1.**  
**REVENUE FOR 1914.**

Water rentals .....		\$13,945.20	
Metered water rentals.....		473,554.92	
Penalties, "turn-offs" .....		3,058.00	
Tapping permits .....		10,685.00	
Building purposes .....		659.40	
Fire pipe inspection.....		445.00	
*Profit on sale of water meters.....		5,461.40	
**Profit on sale of water meter repairs.....		3,131.49	
			\$510,940.41
*Meter inventory, January 1, 1914.....	\$7,784.40		
Purchases during 1914.....	31,257.40		
Revenue for sale of water meters.....		\$33,951.50	
Inventory, December 31, 1914.....		10,551.70	
Profit during 1914.....	5,461.40		
		\$44,503.20	\$44,503.20
**Meter repair inventory, January 1, 1914.....	\$4,215.90		
Purchases during 1914.....	3,343.71		
Revenue for sale of meter repairs.....		\$7,033.70	
Inventory, December 31, 1914.....		3,657.40	
Profit during 1914.....	3,131.49		
		\$10,691.10	\$10,691.10

**TABLE NO. 2.**  
**EXPENSE FOR 1914.**

Maintenance.			
	Wages.	Materials.	Total.
Street service expense.....	\$26,523.49	\$5,966.62	\$32,490.11
Tapping expense .....	5,187.48	2,800.96	7,989.44
Supervisor's expense .....	5,362.18	199.71	5,561.89
Engineer's expense .....	4,212.23	224.56	4,436.79
Barn expense .....			3,441.75
Sprinkling standpipe expense .....			3,620.31
Warehouse expense .....			718.78
Diving apparatus expense .....			48.42
Watering trough expense.....			285.48
Lowry Hill tower expense.....			928.79
Prospect Park tower expense.....			423.78
Stop box expense.....			86.35
Force main expense, 50c.....			32.50
Water main lowering expense.....			2,145.08
Damage to property expense.....			225.00
Roads and boulevards expense.....			410.02
Gate opening device expense.....			136.66
Pipe yard No. 2 expense.....			350.45
Station No. 4, header expense.....			282.34
			\$63,522.94
Pumping.			
Pumping Station No. 1.....	\$189.48	\$38.51	\$227.99
Pumping Station No. 3, park expense .....	1,193.71	96.84	1,290.55
Pumping Station No. 4, park expense .....	809.53	41.28	850.81
Pumping Station No. 5.....	4,592.06	8,976.91	13,568.97
Pumping Station No. 4.....	13,047.42	34,323.85	47,371.27
			\$63,309.59
Purification.			
Filtration expense .....	\$29,179.02	\$50,126.05	\$79,305.07
			\$79,305.07
Registrar and Collection.			
Collection and inspection.....			\$11,280.77
Registrar office expense.....	\$14,576.35	\$452.19	15,028.54
Meter expense .....			29,226.82
			\$55,456.13
General Expense.			
General expense .....			\$1,273.48
Filtration litigation expense.....			6,396.19
			\$7,669.67
Total operation and maintenance expense.....			\$269,263.40
Balance being operating profit for 1914.....			241,677.01
			\$510,940.41

TABLE NO. 3.

## REVENUE AND EXPENSE SURPLUS ACCOUNT.

## Credit.

Balance on hand, January 1, 1914.....	\$253,354.16	
Revenue surplus, 1914.....	241,677.01	
Special assessment "tax levy".....	108,435.90	
Penalty on taxes.....	1,509.08	
13th Ave. N. E. assessment.....	369.90	
Marshall St. assessment.....	32.50	
	<u>          </u>	\$600,378.25

## Debit.

Construction and charged to fixed properties:		
Street mains .....	\$285,778.30	
Force main, 50-inch .....	6,089.95	
Force main, 54 inch .....	19,527.86	
Filtration drain, 20 inch .....	169.44	
Lowry Hill water tower.....	3,073.67	
Prospect Park water tower.....	5,129.00	
Warehouse and yards.....	3,372.65	
Superintendent's residence, filtration plant.....	336.75	
Filtration plant .....	136,126.01	
	<u>\$458,603.13</u>	
Balance in revenue and expense surplus account..	141,775.12	\$600,378.25

TABLE NO. 4.

## CAPITAL SURPLUS (BOND ISSUE).

## Credit.

Balance on hand, January 1, 1914.....	\$19,187.19	
Miscellaneous receipts .....	17,827.29	
	<u>          </u>	\$34,014.48

## Debit.

Construction and transferred to fixed properties:		
Filtration plant, "wages".....		\$34,014.48

TABLE NO. 5.

## Assets.

Cash on hand .....	\$42,780.10	
Current fund .....		\$42,780.10
Sundry debtors:		
Filtration plant .....	102.59	
Meter sales .....	432.00	
Meter repairs .....	1,103.60	
Street service expense.....	3,499.45	
Delinquent water rentals.....	2,019.99	
Penalties, "turn offs" .....	1,679.75	
Materials, tools and supplies.....	2,869.65	
Fire pipe inspection .....	65.00	
Building purposes .....	10.00	
Tapping permits .....	71.00	
Pumping Station No. 4, expense.....	11.50	
Barn expense .....	11.75	
Street opening expense .....	560.00	
Tapping expense .....	25.00	
Sprinkling standpipes .....	280.50	
Personal injury .....	7.50	
Supervisor's expense .....	73.72	
Engineer's expense .....	73.71	
Street mains .....	32.52	
Force main, 54-inch.....	16.30	
Filtration expense .....	458.14	
Distribution main, 48-inch.....	81.20	
Water rental, November, 1914.....	36.55	
Metered water rental, August, 1914.....	234.93	
Metered water rental, November, 1914.....	644.12	
	<u>          </u>	14,450.47

12. Cast iron pipe (water)—30-inch and 36-inch, \$24.20 per ton, F. O. B. cars, Minneapolis; one-half of 1 per cent; 6-inch, 8-inch, 12-inch and 16-inch, \$23.50 per ton, F. O. B. cars, Minneapolis; one-half of 1 per cent.
13. Water valves—
 

6-inch,	\$ 9.25,	F. O. B. Minneapolis;	2 per cent.
8-inch,	14.30,	F. O. B. Minneapolis;	2 per cent.
12-inch,	23.70,	F. O. B. Minneapolis;	2 per cent.
16-inch,	60.50,	F. O. B. Minneapolis;	2 per cent.
24-inch,	165.00,	F. O. B. Minneapolis;	2 per cent.
14. Hydrants, \$32.80, F. O. B. Minneapolis; 2 per cent.
15. Vitrified clay sewer pipe; all 2 per cent—
 

6-inch,	8.5c	per foot delivered on ditch, single strength.
9-inch,	17.1c	per foot delivered on ditch, single strength.
12-inch,	32.5c	per foot delivered on ditch, double strength.
15-inch,	45.5c	per foot delivered on ditch, double strength.
18-inch,	67.5c	per foot delivered on ditch, double strength.
20-inch,	86c	per foot delivered on ditch, double strength.
22-inch,	98c	per foot delivered on ditch, double strength.
24-inch,	\$1.16	per foot delivered on ditch, double strength.
27-inch,	1.60	per foot delivered on ditch, double strength.
30-inch,	1.90	per foot delivered on ditch, double strength.
33-inch,	2.66	per foot delivered on ditch, double strength.
36-inch,	3.00	per foot delivered on ditch, double strength.
16. Hard burned sewer brick—\$9.25 per M., F. O. B. Minneapolis. 25 M.
17. Youghiogheny lump coal (on B. T. U., 62719 B. T. U. 1 cent) \$4.56 per ton delivered by team; 2 per cent.
18. Youghiogheny screenings (on B. T. U., 84177 B. T. U. for 1 cent) \$3.16 per ton, F. O. B. cars; 2 per cent.  
Common labor, \$2.50 for 8 hours.  
Teams, \$5.00 for 8 hours.  
Skilled labor, union rates.

#### CIVIL SERVICE COMMISSION.

The Civil Service Commission commenced operation in September, 1913, and one year's experience with this commission was at times a little awkward, but on the whole, rather satisfactory.

The Secretary of the Commission, Mr. Wright, was inclined to be rather of a theoretical and impractical turn of mind, and caused some unnecessary friction, but as this gentleman resigned during the summer, and his assistant Mr. Wheeler, promoted to Secretary, matters went along much better after this change was made; and I do not doubt that this commission will operate in harmony with the other departments in the future.

TABLE No. 1

INVENTORY OF PERMANENT PUBLIC IMPROVEMENTS JANUARY 1, 1915  
CONSTRUCTED BY OR IN CHARGE OF THE CITY ENGINEER'S DEPT.

	Length in Miles	Cost	Total Cost
Pavements on streets, alleys and bridges.....	218 275		\$7,841,220 14
Curb and curb and gutter.....	715 192		1,737,572 37
Sewer and sewer tunnels.....	376 000		9,847,399 64
Water mains.....	538 700		6,042,545 31
Water works plant.....			1,212,332 82
Water works plant reservoir and pipe lines.....			776,017 46
Water works plant filtration.....			937,320 24
Bridges—			
Over Mississippi.....		\$1,685,923 60	
Over Bassett's creek.....		153,443 83	
Over Graham creek.....		651 54	
Over University creek.....		15,084 57	
Over Shingle creek.....		16,324 84	
Over Minnehaha creek.....		118,264 42	
Over Bridal Veil creek.....		461 72	
Over Webber creek.....		135 00	
Over Mill Co.'s canal.....		10,004 52	
Over Tuttle creek.....		1,000 00	
Over Horse Shoe lake.....		881 16	
Over Calhoun and Lake of the Isles canals.....		110,637 82	
Over or under railroads.....		1,579,802 11	3,692,615 13
Municipal subway.....			14,004 50
Crematory.....			80,000 00
Total.....			\$32,181,027 61



**TABLE No. 2**  
**AMOUNT AND COST OF LUMBER USED UNDER THE DIRECTION OF THE**  
**CITY ENGINEER'S DEPARTMENT DURING SEASON OF 1914**

Wards	Total Feet	Cost
First.....	26,137	\$707.59
Second.....	16,042	363.14
Third.....	37,751	905.18
Fourth.....	24,200	546.98
Fifth.....	8,553	194.21
Sixth.....	22,928	540.37
Seventh.....	18,910	412.30
Eighth.....	95,207	2,196.22
Ninth.....	17,913	403.94
Tenth.....	40,012	903.07
Eleventh.....	20,064	450.36
Twelfth.....	10,296	191.74
Thirteenth.....	129,271	3,005.43
Total.....	468,284	\$10,820.38
Sewers, and covering Bassetts creek.....	641,499	\$14,813.80
Bridge and bridge repairs.....	1,123,706	26,878.95
Oak lumber for bridge repairs.....	7,268	292.23
Artificial curb and gutter.....	36,293	922.72
Paving.....	117,603	2,602.19
Special street improvements.....	7,772	197.19
Sea wall.....	37,115	932.09
Good roads fund.....	1,352	34.73
Total.....	1,972,608	\$46,673.90

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\*Prev  
1890 4.23  
1900 5.16  
1901 5.33  
1902 4.51  
1903 4.68  
1904 3.54  
1905 2.50  
1906 4.55  
1907 6.34  
1908 8.10  
1909 8.28  
1910 8.00  
1911 7.58  
1912 2.84  
1913 5.75  
1914 6.78  
1915 3.86

TD.03

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TABLE No. 2  
AMOUNT AND COST OF LUMBER USED UNDER THE DIRECTION OF THE  
CITY ENGINEER'S DEPARTMENT DURING SEASON OF 1914

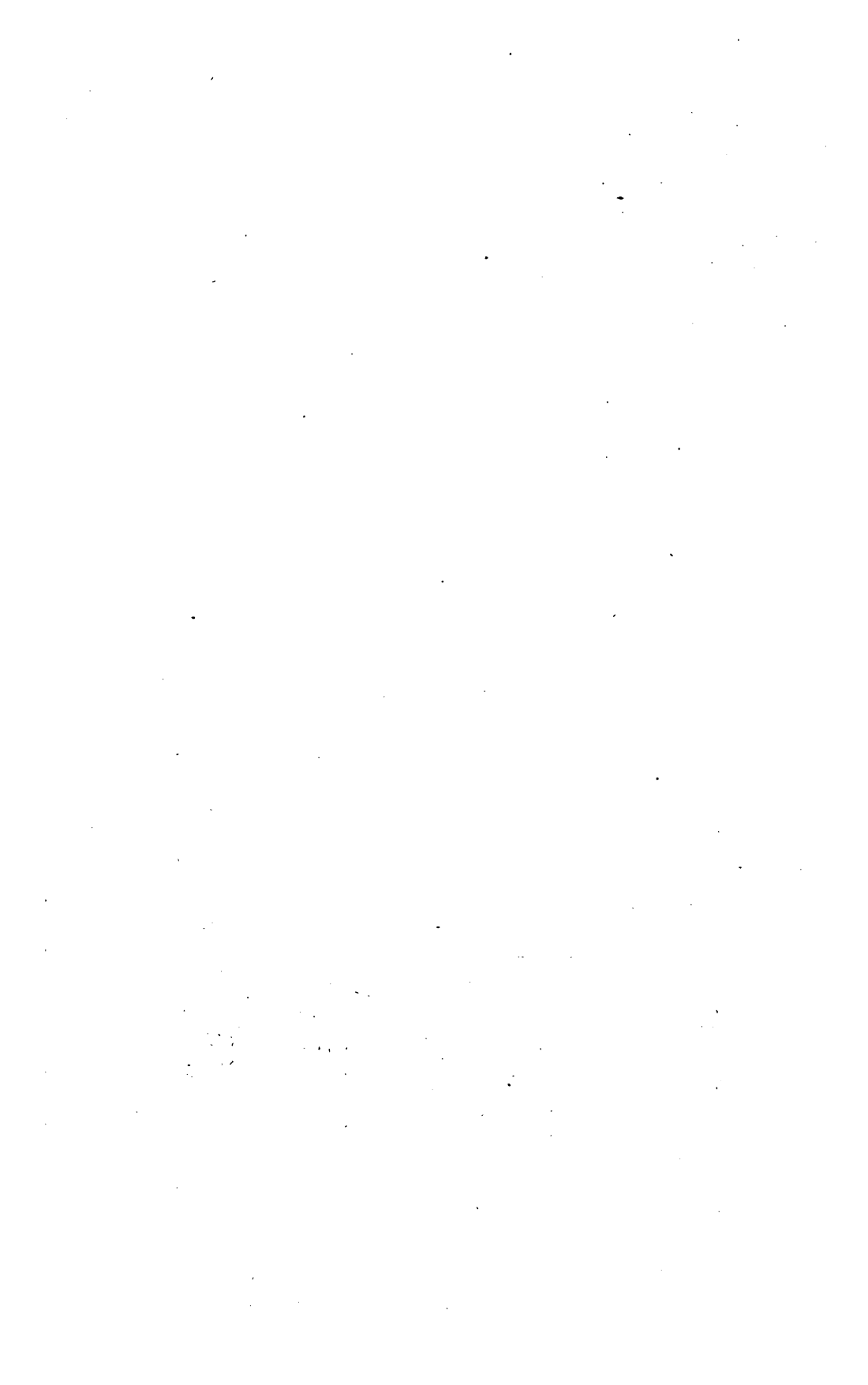
Wards	Total Feet	Cost	NEI
First .....	26,137	\$707.1	
Second .....	16,042	363.1	
Third .....	37,751	905.1	
Fourth .....	24,200	546.9	nd
Fifth .....	8,553	194.2	h'n
Sixth .....	22,928	540.3	
Seventh .....	18,910	412.3	
Eighth .....	95,207	2,196.1	
Ninth .....	17,913	403.9	
Tenth .....	40,012	903.0	
Eleventh .....	20,064	450.3	
Twelfth .....	10,296	191.7	
Thirteenth .....	129,271	3,005.4	1.2
Total .....	468,284	\$10,820.38	1.1
Sewers, and covering Bassetts creek .....	641,499	\$14,813.80	1.33
Bridge and bridge repairs .....	1,123,706	26,878.95	1.51
Oak lumber for bridge repairs .....	7,268	292.23	1.68
Artificial curb and gutter .....	36,293	922.72	3.54
Paving .....	117,603	2,602.19	1.50
Special street improvements .....	7,772	197.19	1.55
Sea wall .....	37,115	932.09	5.34
Good roads fund .....	1,352	34.73	3.10
Total .....	1,972,608	\$46,673.90	8.28

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191.23  
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199.00  
199.58  
199.84  
199.75  
199.78  
3.86  
9.03



**TABLE No. 3**  
**EXPENDITURE FOR PUBLIC IMPROVEMENTS UNDER THE DIRECTION**  
**OF THE CITY ENGINEER FROM JANUARY 1, 1914,**  
**TO JANUARY 1, 1915**

Engineer's department pay rolls.....	\$53,330.63	
Printing and stationery.....	1,064.08	
Instruments and tools.....	1,448.66	
General expenses.....	1,295.91	
		57,139.28
<b>Bridges—</b>		
Bridge repairs.....	\$44,581.93	
New bridges (bond issue).....	265,333.11	
		309,915.04
<b>Sewers—</b>		
Construction and sewer bond fund.....	\$815,302.51	
Old sewers.....	48,979.48	
Sewer and water house connections (H. C.).....	6,393.63	
Sewer and wa,er house connections (I. & E.).....	16,134.08	
		886,809.70
<b>Paving—</b>		
New.....	\$388,004.71	
Paving repairs.....	23,267.24	
		411,273.95
<b>Curb and gutter—</b>		
New.....	\$131,629.64	
Curb repairs.....	2,389.81	
		134,019.45
<b>Wards—</b>		
Street funds.....	\$400,345.27	
Sprinkling.....	230,785.62	
New sidewalk.....	38,850.67	
Sidewalk repairs.....	12,636.32	
		682,617.88
<b>Miscellaneous—</b>		
Refund on permits.....	\$1,028.76	
Good roads fund.....	102,162.64	
Sidewalk inspection.....	5,322.44	
Conduit inspection.....	2,087.00	
Sidewalk intersections.....	9,816.40	
General expense and auditors' descriptions P. I.....	6,168.85	
Maintenance of automobile.....	1,446.58	
Islands of safety.....	24.00	
New street signs.....	2,458.18	
Special street improvements.....	352,604.55	
Foundation for city scales.....	8.49	
Laboratory equipment.....	3.80	
Steam shovel equipment.....	39.69	
Crusher operation.....	315.97	
Asphalt plant repairs.....	1,330.78	
Bridge watchmen.....	2,778.25	
Equipment for special street improvements.....	10,319.37	
Lot and appraisers.....	25,125.00	
Sea wall.....	31,713.17	
Special P. I. bond, 1913.....	10,556.88	
		565,310.80
<b>Total.....</b>		<b>\$3,047,086.10</b>

TABLE No. 4  
STATISTICS OF THE CITY BY WARDS, JANUARY 1, 1915

WARDS	Area in Square Miles	Population Census 1910	Population Per Square Mile	MILES OF STREETS					Miles of Curb	Miles of Stone Walk	Miles of Sewers	Miles of Water Mains	No. of Sewer Con- nections	No. of Water Con- nections
				Miles Not Trav- eled	Not Graded	Graded	* Paved	Total Miles						
First.....	2.40	19,015	7,936	4.59	5.34	22.41	6.43	38.77	34.86	39.77	14.56	21.57	1,110	2,469
Second.....	4.31	17,050	3,956	10.63	13.49	23.27	8.38	37.77	18,830	39.60	29.49	39.91	2,292	3,761
Third.....	3.61	36,798	10,176	7.02	8.90	29.13	13.31	50.36	19,775	109.13	50.31	57.77	4,783	7,198
Fourth.....	3.60	35,325	9,836	10.47	9.06	26.91	24.19	39.70	17,653	82.31	38.31	30.15	3,424	5,292
Fifth.....	1.38	39,320	28,246	.....	.....	26.91	13.59	39.70	57,674	57.57	23.49	30.73	2,756	5,439
Sixth.....	1.73	13,450	7,761	.....	.....	11.96	3.93	39.93	32.53	22.33	10.32	11.87	1,173	2,356
Seventh.....	3.72	30,050	8,071	10.00	15.98	37.67	2.69	68.73	54.72	66.00	30.55	34.31	3,153	7,169
Eighth.....	4.06	34,700	8,547	9.21	6.75	47.67	11.90	68.53	104.72	114.33	51.55	61.64	3,607	7,447
Ninth.....	4.18	27,650	6,610	23.60	34.76	26.62	5.24	93.62	167.17	77.72	32.81	43.44	2,629	4,138
Tenth.....	5.88	17,150	2,917	23.25	35.18	29.57	3.75	93.72	39.55	55.32	22.81	43.44	2,629	4,138
Eleventh.....	1.01	10,150	18,960	.....	.....	19.50	3.67	23.17	6,894	38.33	18.35	20.32	2,172	2,972
Twelfth.....	7.28	15,625	2,116	30.77	57.52	39.68	2.76	130.73	4,851	54.38	25.95	54.26	1,519	3,372
Thirteenth.....	8.86	16,175	1,825	30.73	48.73	47.79	2.73	129.98	48.72	89.27	15.39	66.15	1,008	5,225
Total.....	53.29	301,408	Av. 5,656	156.67	237.01	378.49	109.26	881.43	730.11	858.49	369.92	532.30	34,012	56,754

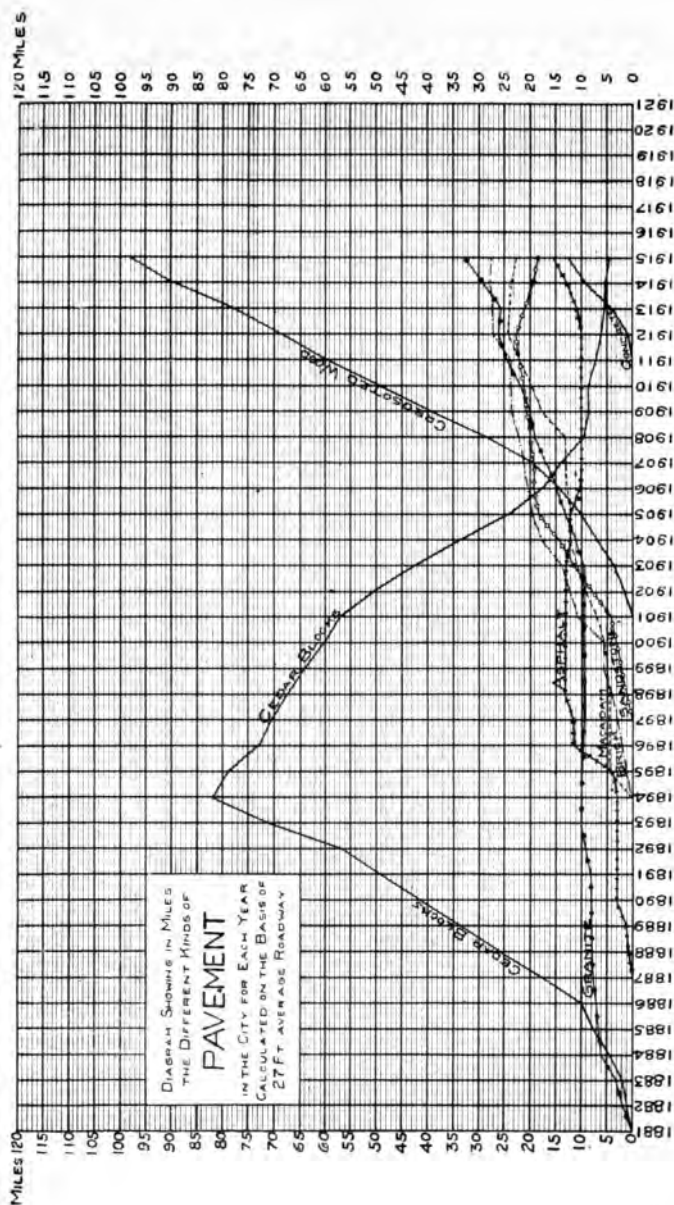
\*—Exclusive of macadam paving and paving in alleys.

TABLE No. 4—Continued  
STATISTICS OF THE CITY BY WARDS, JANUARY 1, 1915

WARDS	Miles of Street Car Tracks Single Line	Valuation Real and Personal 1914	Valuation Per Capita Census 1910	Rate of Taxation for Ward Fund 1914 Mills	Amount of Tax Levy for Ward Fund 1914	Miles of Sprinkled Streets	Miles of Sidewalk Ordered Tax 1914	Street Lighting		Building Permits		
								No. of Lights	Cost	No.	Valuation	
												Electric
First.....	8.04	\$5,204,936	\$273.73	2.50	\$13,112.50	18.60	1.50	247	.....	\$14,059.94	199	\$237,815
Second.....	15.45	12,798,666	750.65	2.00	26,146.55	23.27	2.35	337	283	24,525.67	297	1,104,825
Third.....	13.85	13,554,313	368.80	2.25	30,531.08	47.07	4.33	485	860	42,358.39	544	900,330
Fourth.....	24.64	66,413,815	1,880.08	1.40	93,008.25	40.26	1.14	677	782	48,165.17	469	2,675,605
Fifth.....	11.58	33,869,152	1,155.15	1.70	57,590.88	28.20	0.09	296	547	24,655.69	225	4,281,395
Sixth.....	3.95	5,887,724	381.08	1.75	10,303.52	11.98	.....	194	.....	10,133.04	72	52,905
Seventh.....	12.63	5,686,994	283.64	2.50	14,231.20	31.50	7.02	215	458	20,676.03	539	731,235
Eighth.....	20.09	19,866,001	572.52	2.50	49,679.24	60.38	2.27	254	1,378	38,671.89	697	1,477,810
Ninth.....	13.52	6,392,481	249.22	2.50	16,024.50	26.90	2.65	280	336	22,520.85	465	451,980
Tenth.....	12.65	5,521,565	321.95	2.50	13,803.89	19.75	8.14	290	201	17,431.35	574	584,385
Eleventh.....	7.58	3,460,865	180.72	2.50	8,652.17	18.84	0.32	193	202	12,329.96	194	260,600
Twelfth.....	20.79	5,843,251	373.97	2.50	14,699.78	11.28	15.70	304	113	19,104.14	987	959,000
Thirteenth.....	20.68	11,802,917	729.70	2.50	29,528.38	41.48	12.00	315	139	20,983.30	753	1,496,640
Totals.....	185.45	\$196,303,280	\$806.23	.....	377,311.94	379.51	57.51	4,087	5,019	\$315,615.42	6,015	\$15,214,525







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## CITY ENGINEER'S REPORT

TABLE No. 4  
STATISTICS OF THE CITY BY WARDS, JANUARY 1, 1915

WARDS	Area in Square Miles	Popula- tion of Census 1910	Popula- tion Per Square Mile	MILES OF STREETS					Miles of Stone Walk	Miles of Sewers	Miles of Water Mains	No. of Sewer Con- nections	No. of Water Con- nections
				Miles Not Trav- eled	Not Graded	Graded	* Paved	Total Miles					
First.....	2.49	19,015	7,636	4.59	5.34	22.41	6.43	38.77	39.77	14.56	21.57	1,110	2,469
Second.....	4.31	17,050	3,956	10.63	15.49	23.27	8.38	57.77	59.60	29.49	39.91	2,292	3,761
Third.....	3.41	36,748	10,776	7.02	8.90	39.13	15.31	70.36	109.13	50.51	57.77	4,783	7,198
Fourth.....	4.00	35,325	8,831	10.47	9.06	26.01	24.16	69.70	82.31	38.31	50.15	3,424	5,292
Fifth.....	1.38	29,320	21,246	.....	.....	11.86	18.55	30.41	55.22	23.49	30.73	2,756	5,459
Sixth.....	1.71	15,450	21,761	.....	.....	10.24	3.69	13.93	22.63	10.32	11.87	973	2,356
Seventh.....	3.72	20,050	5,375	10.00	15.28	34.74	2.69	62.71	54.73	30.15	34.51	3,133	4,169
Eighth.....	4.06	34,700	8,547	2.21	6.75	47.67	11.90	68.53	66.60	51.55	61.64	6,207	7,447
Ninth.....	6.18	25,650	4,150	25.00	34.76	26.62	5.24	91.62	71.33	32.01	43.44	2,626	4,138
Tenth.....	5.88	17,150	2,917	25.25	35.18	29.57	3.75	93.75	55.33	29.84	40.04	2,002	4,064
Eleventh.....	7.28	19,150	18,960	.....	.....	19.50	3.67	23.17	38.30	18.35	20.32	2,179	2,872
Twelfth.....	8.86	15,625	2,116	30.77	57.52	39.68	2.76	130.73	54.38	25.95	54.20	1,519	3,304
Thirteenth.....	.....	16,175	1,825	30.73	48.73	47.79	2.73	139.98	89.27	15.39	66.15	1,008	5,225
Total.....	53.29	301,408	Av 5,656	156.67	237.01	378.49	109.26	881.43	730.11	369.92	532.30	34,012	56,754

\*—Exclusive of macadam paving and paving in alleys.

TABLE No. 4—Continued  
STATISTICS OF THE CITY BY WARDS, JANUARY 1, 1915

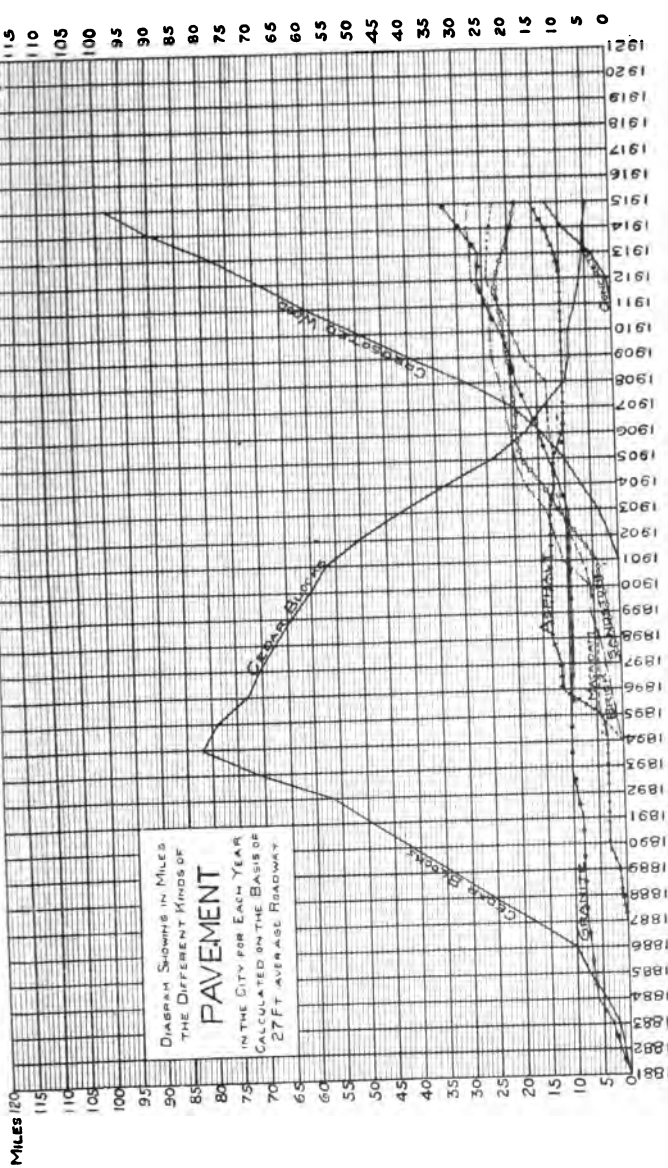
WARDS	Miles of Street Car Tracks Single Line	Valuation Real and Personal 1914	Valuation Per Capita Census 1910	Rate of Taxation for Ward Fund 1914 Mills	Amount of Tax Levy for Ward Fund 1914	Miles of Sprinkled Streets	Miles of Sidewalk Ordered Tax 1914	Street Lighting			Building Permits	
								No. of Lights		Cost	No.	Valuation
								Electric	Gas			
First.....	8.04	\$5,204,936	\$273.73	2.50	\$13,112.50	18.60	1.50	247	.....	\$14,069.94	199	\$237,816
Second.....	15.45	12,798,666	750.65	2.00	26,146.55	23.27	2.35	337	.....	24,525.67	297	1,104,825
Third.....	13.85	13,554,313	368.80	2.25	30,531.08	47.07	4.33	485	.....	42,358.39	544	900,330
Fourth.....	24.64	66,413,815	1,890.08	1.40	93,008.25	40.26	1.14	677	.....	48,165.17	469	2,675,605
Fifth.....	11.58	33,869,152	1,155.15	1.70	57,590.88	28.20	0.09	296	.....	24,655.69	225	4,281,395
Sixth.....	3.95	5,887,724	381.08	1.75	10,303.52	11.98	.....	194	.....	10,133.04	72	52,905
Seventh.....	12.63	5,686,994	283.04	2.50	14,231.20	31.50	7.02	215	.....	20,676.03	539	731,235
Eighth.....	20.09	19,866,601	572.52	2.50	49,679.24	60.38	2.27	254	.....	38,671.89	697	1,477,810
Ninth.....	13.52	6,392,481	249.22	2.50	16,024.50	26.90	2.65	280	.....	22,520.85	465	451,980
Tenth.....	12.65	5,521,565	321.95	2.50	13,803.80	19.75	8.14	290	.....	17,431.35	574	584,385
Eleventh.....	7.58	3,460,865	180.72	2.50	8,652.17	18.84	0.32	193	.....	12,329.98	194	260,600
Twelfth.....	20.79	5,843,251	373.97	2.50	14,899.78	11.28	15.70	304	.....	19,104.14	987	959,000
Thirteenth.....	20.68	11,802,917	729.70	2.50	29,528.38	41.48	12.00	315	.....	20,983.30	753	1,496,640
Totals.....	185.45	\$196,303,280	\$806.23	.....	377,311.94	379.51	57.51	4,087	5,019	\$315,615.42	6,016	\$15,214,525



TABLE No. 5  
SUMMARY OF ALL PAVEMENT IN THE CITY, JANUARY 1, 1914

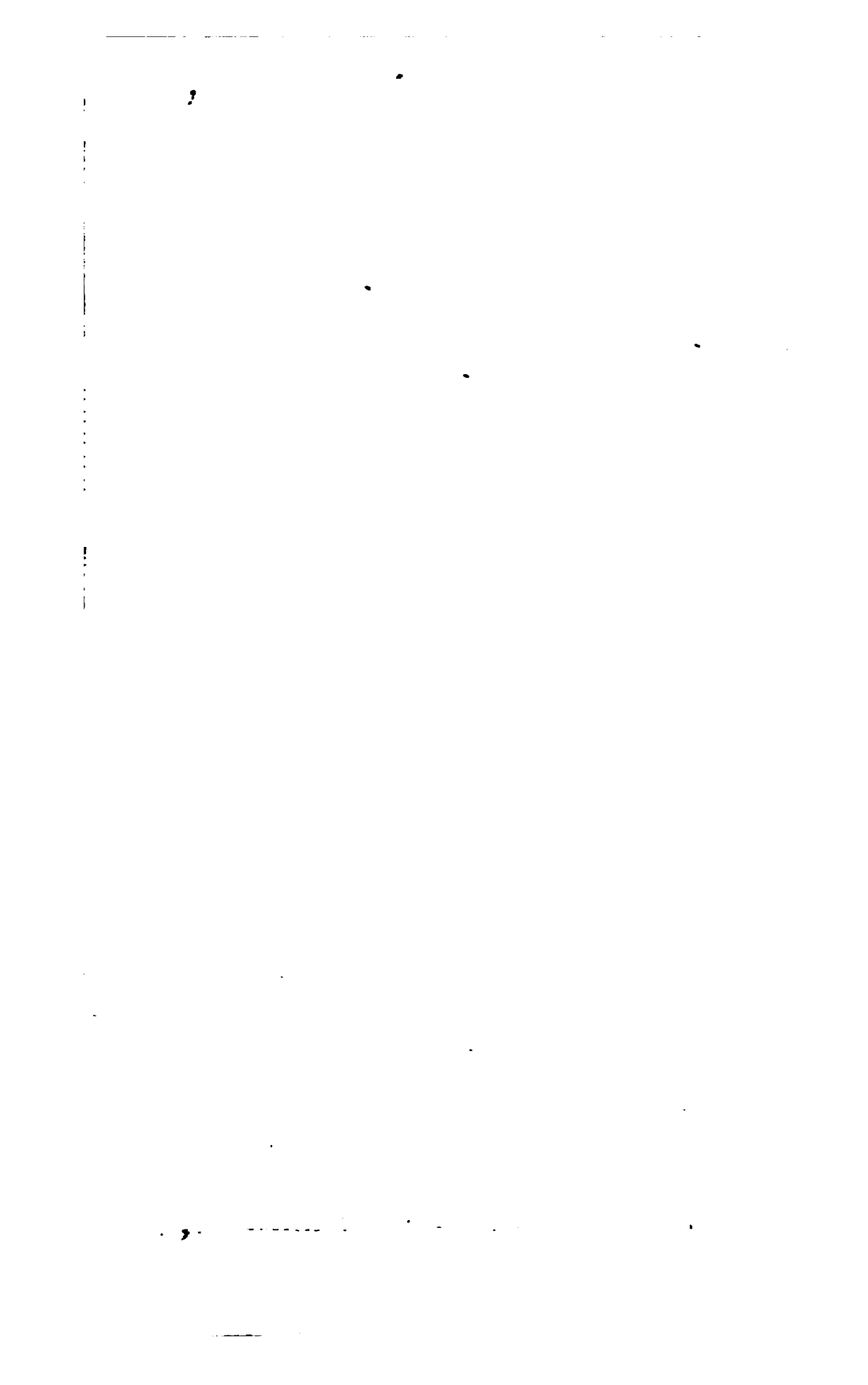
Kind	Where Laid	SQUARE YARDS AS LAID BY WARDS BELOW													Total Square Yards	Cost	Miles of Streets and Alleys	Miles of Av. 27 ft. Road-way
		1st Ward	2nd Ward	3rd Ward	4th Ward	5th Ward	6th Ward	7th Ward	8th Ward	9th Ward	10th Ward	11th Ward	12th Ward	13th Ward				
Asphalt and Asphaltic Concrete	Streets	3,731	20,768	2,225	104,776	57,988									203,083	\$619,027.83	12.82	
	Alleys				61	633									694	1,357.54	.044	
	St. Rys.				470	1,300									1,770	4,067.19	.112	
	Total	3,731	20,768	2,225	105,307	59,901									205,547	\$624,482.56	8.1585	
Brick	Streets	71,765	5,675	35,223	83,481	26,862	28,358			96,821	10,319	5,641			364,145	\$691,441.55	23.989	
	Alleys	504			24,254	13,230			407						38,305	\$3,592.70	2.424	
	St. Rys.	225		9,839	11,274	683	6,121				4,645	2,084			35,096	\$6,446.08	2.316	
	Bridges	617	617	582	3,098										4,914	6,030.95	.310	
	Total	73,111	6,517	45,644	122,107	40,775	34,479		407	96,821	14,964	7,725			442,550	\$847,511.34	17.9543	
Creosoted wood	Streets	62,120	113,667	115,071	241,584	303,705	44,006	50,641	225,152	39,019	22,688	70,754	52,815	15,200	1,356,422	\$3,419,507.88	85.633	
	Alleys				135	2,256	195								2,586	6,869.79	0.163	
	Bridges	5,212	3,579	3,181	4,101		2,288				2,708		1,328		22,597	43,444.30	1.427	
	St. Rys.	1,549		4,000	7,153	11,268			8,872		4,020				36,882	115,905.10	2.328	
	Total	69,081	117,246	122,387	255,094	315,188	46,294	50,641	234,024	39,019	29,416	70,754	54,143	15,200	1,418,487	\$3,565,627.07	89.551	
Cedar Blocks	Streets		17,607	26,216	3,562	7,261			10,636	6,833					72,115	\$54,351.43	4.553	
	Alleys			1,255	1,020	555									2,830	2,915.56	0.178	
	Bridges	3,231	2,316	2,968								1,051			9,566	8,216.12	0.804	
	Total	3,231	19,923	30,439	4,582	7,816			10,636	6,833		1,051			84,511	\$65,483.21	1.5597	

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TABLE No. 5—Continued  
SUMMARY OF ALL PAVEMENT IN THE CITY, JANUARY 1, 1914

Kind	Where Laid	SQUARE YARDS AS LAID BY WARDS BELOW												Total Square Yards	Cost	Miles of Streets and Alleys	Miles of Av. 27 ft. Road-way
		1st Ward	2nd Ward	3rd Ward	4th Ward	5th Ward	6th Ward	7th Ward	8th Ward	9th Ward	10th Ward	11th Ward	12th Ward	13th Ward			
Granite Blocks	Streets	.....	15,794	18,081	24,933	36,431	2,214	.....	.....	.....	32,506	.....	.....	.....	129,959	.....	8.205
	Alleys	.....	703	.....	3,891	876	.....	.....	.....	.....	.....	.....	.....	.....	5,470	.....	0.346
	St. Rys.	16,817	35,396	20,656	58,047	50,469	7,901	16,523	45,836	25,201	5,319	26,112	22,382	5,474	335,533	1,016,779.07	21.182
Concrete	Total	16,817	51,893	38,137	86,871	87,776	10,115	16,523	45,836	25,201	37,825	26,112	22,382	5,474	470,962	\$1,344,100.25	5.3946
	Streets	.....	.....	57,942	14,922	.....	.....	.....	5,174	14,803	.....	.....	.....	29,789	122,600	\$151,102.64	7.740
	Alleys	.....	5,604	1,226	.....	.....	.....	7,964	1,409	.....	10,833	1,716	.....	.....	2,408	2,281.51	.059
Macadam	St. Rys.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27,363	27,363.00	1.727
	Total	.....	5,604	59,168	14,922	.....	.....	7,964	6,583	14,803	10,833	1,716	.....	29,789	151,372	\$180,747.15	8.8702
	Streets	54,086	47,553	144,508	1,151	49,804	.....	.....	10,640	.....	15,079	.....	.....	54,163	377,084	\$489,197.04	23.806
Sandstone Blocks	St. Rys.	.....	.....	.....	.....	.....	.....	.....	.....	.....	704	.....	.....	.....	704	528.50	.044
	Total	54,086	47,553	144,508	1,151	49,804	.....	.....	10,640	.....	15,783	.....	.....	54,163	377,788	\$489,725.54	18.1135
	Streets	.....	26,267	177,879	28,981	5,175	20,061	.....	.....	773	1,706	731	.....	.....	261,573	\$588,594.85	16.513
Grand totals	Alleys	.....	.....	582	2,170	2,019	1,568	.....	.....	.....	.....	.....	.....	.....	4,781	5,540.20	.302
	St. Rys.	586	2,957	21,298	8,918	.....	.....	.....	4,570	.....	.....	.....	.....	.....	39,903	107,477.97	2.519
	Total	586	29,224	199,769	40,069	7,194	21,629	.....	.....	5,340	1,706	731	.....	.....	306,257	\$703,543.02	9.9020
Miles of average 27 ft. rdw.	Grand totals	220,643	298,725	642,277	630,103	568,554	112,517	75,148	321,741	188,026	110,527	108,089	76,525	104,596	3,457,474	\$7,841,220.11	135.3796
	Miles of average 27 ft. rdw.	13.930	18.856	40.548	39.779	35.894	7.103	4.744	20.312	11.870	6.978	6.824	4.831	6.603	218.275	.....	218.275



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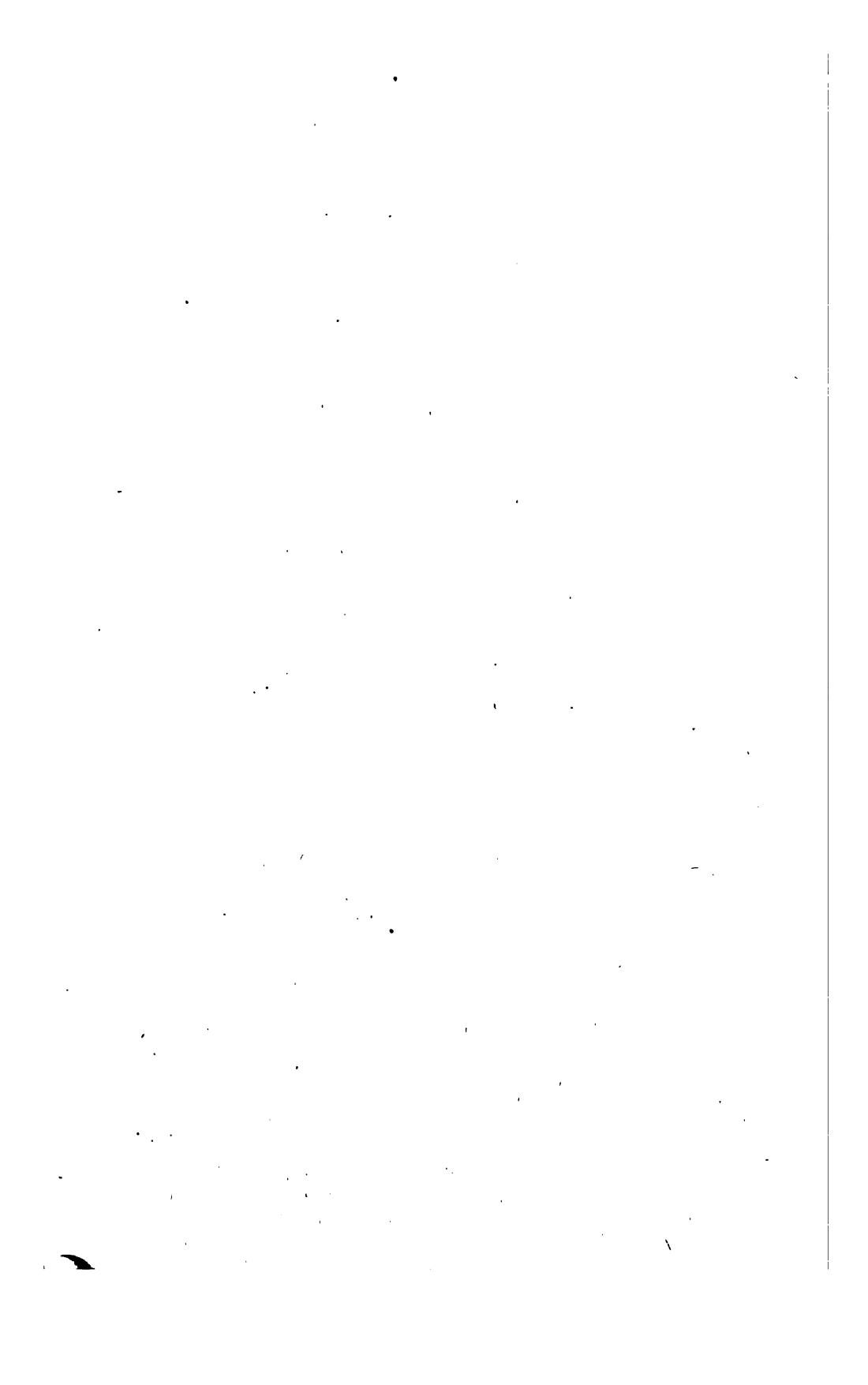


TABLE No. 8  
TABLE SHOWING PAVEMENT REMOVED AND REPLACED WITH OTHER PAVEMENT, JANUARY 1ST, 1915

STREET	FROM	TO	ORIGINAL PAVEMENT				NEW PAVEMENT			
			When Laid	Kind	Square Yards	Cost	When Laid	Kind	Square Yards	Cost
Previously tabulated..										
Hennepin av.....	15th st.....	Oak Grove st.....	1902 & 1903	S. S. on conc't..	1,324,085.93	1,481,489.67	.....	.....	1,292,782.93	\$2,909,259.67
Hennepin av.....	Oak Grove st.....	Groveland av.....	1903	S. S. on conc't..	11,688.70	30,799.72	1914	Cresoted wood..	11,688.70	24,361.79
Lyndale av. at intersection of Groveland			1903	S. S. on conc't..	3,291.70	8,657.17	1914	Brick blocks...	3,291.70	5,995.36
Lyndale av.....	Vineland pl.....	Grovel'd ter.....	1903	S. S. on conc't..	384.00	1,004.40	1914	Cresoted wood	384.00	864.00
Vineland pl.....	Hennepin av.....	Lyndale av.....	1903	S. S. on conc't..	2,000.00	5,200.00	1914	Brick.....	2,000.00	3,641.00
			1898	S. S. on conc't..	280.00	736.40	1914	Brick.....	280.00	510.00
1st av N.....	Wash. av.....	7th st N.....	1899	S. S. on sand.....	6,523.10	11,756.86	1914	Asphaltic conc't	6,523.10	5,591.60
			1904							
5th st SE.....	Central av.....	6th av SE.....	1904	Macadam.....	10,358.10	12,947.63	1914	Asphaltic conc't	10,358.10	7,980.61
10th st S.....	Harmon pl.....	1st av S.....	1900	Asphalt.....	3,178.50	8,168.74	1914	Asphaltic conc't	3,178.50	3,799.14
University av SE.....	3rd av SE.....	6th av SE.....	1900	S. S. on sand.....	6,858.40	13,147.55	1914	Asphaltic conc't	6,858.40	5,613.00
3rd av N.....	4th st.....	5th st W side	1901	S. S. on sand.....	680.00	1,271.60	1914	Cresoted wood	680.00	1,843.71
Total replaced by city.....					1,369,328.43	\$1,575,239.74			1,338,025.43	\$2,969,459.88
Replaced by St. Ry. previously tabulated.					87,227.40				87,227.40	
					1,456,555.83				1,425,252.83	

TABLE No. 15

**MATERIAL ON HAND AT HAWTHORN AVENUE TOOL HOUSE AND YARD  
DECEMBER 31st, 1914**

**TOOLS AND MACHINERY**

	Number	Value
Adzes, with handles	2	\$2.40
Adz, handles	9	1.35
Asphalt macadam mixers	3	2,000.00
Axes, hand	34	17.00
Axes, long handled	18	10.80
Axe, handles	4	.40
Barrels	11	2.00
Bars, crow	7	8.25
Bars, special	5	3.50
Bars, surfacing	32	2.50
Belt, rubber, 3 inches wide—feet	100	70.00
Belt, lacing, 1/4 inch—feet	2	3.25
Blocks, single	2	2.00
Blocks, double	3	7.50
Blocks, chain	1	12.00
Boots, short rubber—pairs	22	55.00
Boxes, tool	8	40.00
Branding, iron	1	1.00
Brooms, common house	2	.50
Brooms, fibre push	28	20.00
Brooms, steel push	6	12.00
Brushes, squeegee	9	4.50
Bull, points	7	1.75
Cable, steel 1/4 inch—feet	100	5.00
Cable, steel 1/2 inch—feet	100	5.50
Cable, steel 5-16 inch—feet	50	3.00
Cable, steel 1/2 inch—feet	50	3.75
Cans, patent pouring	15	7.50
Cans, flat point pouring	3	2.50
Cans, 1 gallon oil	5	1.00
Cans, 5 gallon oil	46	20.70
Cans, 10 gallon oil	29	20.30
Canthooks	1	.50
Chains, log	17	68.00
Clevises	33	8.25
Coalhods	16	6.40
Clamps, iron screw	24	3.00
<b>Concrete Mixers—</b>		
Chicago street	1	1,200.00
Kochring street	1	1,300.00
Milwaukee street	2	3,000.00
Dippers, tin	28	1.40
Casting for Chicago mixer	1	6.50
Engine, gas and pump	1	147.00
Eveners	1	1.00
Forks, potatoe	7	4.00
Funnels	8	.40
Files	4	1.00
Grader, New Era	1	700.00
Grease, cups	2	.50
Grindstones	1	3.00
Hammers, brick	13	9.75
Hammers, stone	5	2.50
Hammers, sledge	19	6.65
Handles, sledge	18	1.80
Handles, grub hoe	12	1.80
Harrow	1	5.00
Hoes, grub	9	6.75
Hoes, mortar	5	2.50
Hoe, handles	12	1.20
Hose, 1 in armored—feet	50	20.00
Hose, fire—feet	200	10.00
Hose, 1 inch steam—feet	135	54.00
Hose, 1 inch water—feet	1,710	513.00
Jack, screws	4	7.00
Jack, wagon	1	.90
Ladder, 16 foot	1	1.00
Lantern, frames	167	50.10
Lantern, globes (red)	127	19.05
Lantern, globes (white)	6	.90
Levels, spirit	9	7.20
Mold boards	2	2.00
Neck yokes	2	2.00
Oil spreaders	1	250.00

MATERIAL ON HAND AT HAWTHORN AVENUE TOOL HOUSE AND YARD,  
DECEMBER 31st, 1914

## TOOLS AND MACHINERY—Continued

	Number	Value
Padlocks	42	21.00
Paper, sheeting—rolls	28	8.40
Paper, B. D. building—rolls	3	2.70
Pickaxes	197	96.50
Pick, handles	148	22.20
Pails, galvanized iron, 12 quart	21	4.20
Pipe, 1 inch b'l iron—feet	880	37.00
Pipe, 1½ inch b'l iron—feet	6,840	48.30
Pipe, 1½ inch b'l iron—feet	120	8.40
Platform, iron, 4 feet by 4 feet by 1½ inches	1	10.00
Plows, disc for grader	1	100.00
Plows, rooter	4	90.00
Plows, R. R.	6	120.00
Plows, wooden beam	1	15.00
Plow, points, grader	1	1.25
Plow, points, rooter	7	22.25
Plow, points, R. R.	25	81.25
Plow shoes	10	10.00
Plow, shares	5	7.50
Post, holes digger	1	1.00
Rakes, garden	19	5.70
Reducers, with hydrant connection	12	30.00
Rope, 1 inch—feet	200	2.50
Rope, 1½ inch—feet	233	13.98
Rollers, steam tandem	2	2,500.00
Rollers, gas, 3 wheel	2	3,000.00
Saws, cross-cut	7	12.25
Saws, hand	10	10.00
Scrapers, bed	2	5.00
Scrapers, slush	5	16.25
Sand, heater	1	2.50
Screw, drivers	3	.75
Shoes, for road grader	1	2.50
Squares	2	1.00
Steam shovel, Marion-Osgood	1	3,500.00
Steam shovel casting No. 2,291	1	25.00
Steam shovel casting No. 1,519A	1	25.00
Shovels, short handled, square point (good)	225	186.95
Shovels, short handled, square point (fair)	135	67.50
Shovels, short handled, round point	4	2.00
Shovels, long handled	3	1.50
Shovels, scoop	14	7.00
Shovels, snow	24	12.00
Stakes, iron	134	6.70
Scarifier, road	1	500.00
Scarifier, points	12	3.00
Stove, Round Oak heater	1	5.00
Stove pipe, 6 inch—joints	11	1.00
Stove pipe elbows	1	.10
Tampers, iron	4	4.00
Tampers, wooden	2	2.00
Tape lines, metallic	5	7.50
Tarpaulins, size 9x11 feet	1	5.00
Tarpaulins, size 11x19 feet	1	5.00
Tarpaulins, size 11x20 feet	14	70.00
Tarpaulins, size 11x18 feet	3	15.00
Tarpaulins, size 12x16 feet	5	25.00
Tarpaulins, size 12x18 feet	5	25.00
Tarpaulins, size 14x16 feet	2	30.00
Tarpaulins, size 12x20 feet	13	65.00
Tarpaulins, size 14x18 feet	2	10.00
Tarpaulins, size 16x18 feet	1	5.00
Tarpaulins, size 14x20 feet	4	20.00
Templates for concrete, 30 foot	1	10.00
Templates for concrete, 24 foot	1	6.00
Templates for concrete, 16 foot	1	4.00
Tees, grading	13	3.90
Tongs, brick paving	2	3.00
Tongs, stone paving	1	1.75
Trucks, two wheeled lumber	3	22.50
Trowels, mason	1	.50
Trowels, smoothing	4	2.00
Torchoil, with compression tank	1	150.00
Valves, globe	38	24.70
Vise, machinists' adjustable	1	14.35
Water closets, out door	10	21.50

**MATERIAL ON HAND AT HAWTHORNE AVENUE TOOL HOUSE AND YARD,  
DECEMBER 31st, 1914**

**TOOLS AND MACHINERY—Continued**

	Number	Value
Wagons, lumber.....	6	210.00
Wagons, iron wheel truck.....	3	90.00
Wagons, patent dump (AW).....	20	1,000.00
Wagons, stone.....	1	50.00
Wagons, tool.....	7	245.00
Wagons, tank.....	2	100.00
Wagon for steaming blocks.....	1	40.00
Wagon covers, size 4 1/2 by 15 feet.....	2	10.00
Wagon covers, size 7 by 12 feet.....	3	10.00
Wagon covers, size 8 by 12 feet.....	4	10.00
Wheelbarrows, wood n frame, good.....	25	86.50
Wheelbarrows, wood n frame, fair.....	7	17.50
Wheelbarrows, iron frame, good.....	60	180.00
Wheelbarrows, iron frame, fair.....	10	25.00
Wedges, iron.....	7	3.50
Wire, screen.....	1	2.00
Wire, ribbon fence—rolls.....	15	50.00
Wrenches, combination.....	1	.75
Wrenches, hydrant.....	12	6.00
Wrenches, monkey.....	12	9.00
Wrenches, machine.....	3	1.50
Wrenches, pipe.....	12	12.00
Wrenches, plow.....	5	2.50
Wrenches, wagon.....	3	3.00
Wrenches, special.....	7	3.50

**\$23,145.13**

TABLE No. 10

**TOOLS AND MATERIAL IN BLACKSMITH SHOP AT HAWTHORNE AVENUE  
WAREHOUSE, DECEMBER 31st, 1914**

Kind	Number	Value
Anvil.....	1	\$12.00
Babbit, No. 4—lbs.....	50	3.00
Blower, Champion.....	1	1.50
Bolt clipper.....	1	3.00
Bolts, carriage, different sizes.....	1,790	5.00
Bolts, machine, different sizes.....	123	.35
Bolts, stove, different sizes.....	130	.50
Bits, set of, from $\frac{1}{4}$ inch to 1 inch.....	10	.50
Bit, extension, $\frac{1}{4}$ inch.....	1	.50
Brace, breast.....	1	1.50
Burrs, different sizes—lbs.....	33	1.00
Coal, smithing—lbs.....	250	.75
Cold chisels.....	5	.50
Dies, little giant, set $\frac{1}{4}$ inch to 1 inch.....	9	5.00
Draw knife.....	1	.75
Drills, set from $\frac{1}{4}$ inch to 1 inch.....	11	1.25
Drill, press.....	1	15.00
Drill, ratchet.....	1	2.50
Drill points, $\frac{1}{4}$ inch, $\frac{1}{2}$ inch, $\frac{3}{4}$ inch, one each.....		1.25
Files, 16 inch flat mill.....	2	1.00
Files, 12 inch flat bastard.....	2	1.00
Files, 12 inch square bastard.....	1	1.00
Files, 14 inch square bastard.....	2	1.00
Files, 6 inch taper saw.....	5	1.25
Forge.....	1	15.00
Flatters.....	2	.75
Flue expander, $1\frac{1}{2}$ inch to 1 inch.....	1	1.50
Flue, roller, $1\frac{1}{2}$ inch to 1 inch.....	1	1.50
Fuller.....	1	.50
Grindstone.....	1	2.50
Hacksaw frame.....	1	.60
Hacksaw blades.....	5	.30
Hand ax.....	1	.50
Hammers, blacksmith.....	2	.50
Hammers, set.....	1	.35
Hammers, sledge.....	1	.15
Handles, chisel.....	5	.50
Heading, tools.....	2	.50
Hardy.....	1	.25
Lard oil—gallons.....	$\frac{1}{2}$	.25
Iron, bars and band, different sizes—lbs.....	562	11.25
Pincers, round.....	2	1.50
Pipe, extra heavy bl. iron $1\frac{1}{2}$ inch—feet.....	12	1.20
Pipe cutter.....	1	2.50
Pipe dies, set from $\frac{1}{4}$ inch to $1\frac{1}{2}$ inches.....	6	4.50
Pipe tape, sizes $\frac{1}{4}$ inch to 1 inch.....	4	5.00
Pipe vise.....	1	5.00
Punches.....	5	.50
Resin—lbs.....	5	.25
Steel plow—lbs.....	45 $\frac{1}{2}$	4.50
Steel, tool—lbs.....	93	6.98
Saw, keyhole.....	1	.50
Screws, wood, different sizes.....	345	.50
Shears, blacksmith.....	1	15.00
Tongs, blacksmith.....	15	6.00
Tin-smith, snips.....	1	1.00
Valves, 2 inch globe.....	2	1.50
Vise, blacksmith.....	1	12.00
Washers, cut, different sizes—lbs.....	13	.50
Waste, $\frac{1}{2}$ bale.....		5.00
Water glasses, $\frac{1}{2}$ inch by 12 inches.....	12	.50
Water glasses, $\frac{1}{2}$ inch by 8 inches.....	9	.35
Water glasses, $\frac{1}{2}$ inch by 8 inches.....	5	.25
Welding compound—lbs.....	2 $\frac{1}{2}$	.50
		<hr/>
		\$173.53

**MATERIAL ON HAND AT HAWTHORNE AVENUE WAREHOUSE AND YARD,  
DECEMBER 31st, 1914**

**LUMBER AND PAVING MATERIAL**

Kind	Number	Value
Axle grease—lbs.	75	\$1.75
Lath, bundles.	9	2.25
Expansion iron, 2½ inches by ½ inch by 16 feet, 30 pcs.—lbs.	480	14.40
Expansion plates, 7 inch by 7-16 inch by 12 feet, 72 pcs.—lbs.	9,000	270.00
Curbstone, sandstone, straight—feet.	850	212.50
Curbstone, sandstone, dry corners.	9	9.00
Curbstone, granite, wet corners.	2	2.00
Lumber, different sizes, B. M.—feet.	422	8.50
Paint, black asphalt—gals.	5	2.50
Paint, house, mixed—gals.	4	6.00
Gasoline—gals.	65	5.00
Cil. cylinder—gals.	10	3.00
Cil. engine—gals.	2	.35
Oil, hard—lbs.	25	.75
Cil. lard—gals.	2	1.00
Cil. linseed—gals.	5	2.50
Nails, 20 penny, 2 kegs—lbs.	200	5.00
Nails, 60 penny, 2 kegs—lbs.	200	5.00
Rods for concrete template.	6	3.00
		<hr/> \$554.50

**SUMMARY**

Paving tools.	\$41.35
Creosote paving.	2.25
Sandstone curb.	221.50
Granite curb.	2.00
Concrete paving.	287.40
	<hr/> \$554.50

**TOOLS AND MATERIAL AT HAWTHORNE AVENUE WAREHOUSE—ACCOUNT  
CREOSOTE BLOCK PAVING REPAIRS  
DECEMBER 31st, 1914**

Kind	Number	Value
Adzes, with handles.	8	\$10.00
Axes, hand.	20	10.00
Axes, long.	1	.60
Brooms, fibre push.	6	4.50
Cans, 5 gallon oil.	1	.45
Cans, 10 gallon oil.	1	.70
Crowbars.	2	1.50
Covers, wagon.	1	5.00
Coal hods.	2	.80
Hoes, grub.	3	2.25
Hoes, mortar.	3	1.50
Lantern frames.	6	1.80
Lantern globes.	6	.90
Level, spirit.	1	.80
Pails, gal. iron, water.	4	.80
Picks.	12	18.00
Pick handles.	12	1.80
Rakes.	3	.90
Reducer and hydrant connection.	1	2.60
Roller, steam tandem.	1	1,500.00
Shovels, square pointed, short handled.	24	33.00
Saw, hand.	1	1.00
Tampers, iron.	1	1.00
Tampers, wooden.	2	2.00
Wagon, tool.	1	35.00
Wheelbarrows.	2	7.00
Wrenches, hydrant.	1	.50
Wrenches, monkey.	1	.75
		<hr/> \$1,645.05

## MATERIAL AT LAUREL AVENUE WAREHOUSE AND YARD, DECEMBER 31, 1914

Kind	Number	Value
Asphalt, barrels	1	\$5.00
Cement, barrels	103½	129.69
Curbstone, granite straight, lineal feet	485	363.75
Curbstone, granite, radius lineal feet	281½	239.06
Crusher, granite, 2 inch—cubic yards	12	24.00
Crushed sandstone, crusher run—yards	2,350	2,350.00
Creosoted flange strips, lineal feet	2,400	48.00
Lumber, 2 inch by 10 inch Norway (1,417 pieces 16 feet, 100 pieces 14 foot, 31 pieces 12 feet)	BM 40,739	1,018.48
Lumber, 4 by 10 inch Hemlock (76 pieces 12 foot, 81 pieces 14 foot, 116 pieces 16 foot)	BM 13,007	286.15
Engine, Buffalo-Pitts traction	1	500.00
Pitch kettles, 18 barrel capacity	5	750.00
Pitch kettles, 10 barrel capacity	4	400.00
Pitch kettles, 3 barrel capacity	1	50.00
Scales, Fairbanks platform	1	10.00
Paving brick	1,000	24.00
Paving, brick blocks	46,370	1,170.24
Paving blocks, 3½ inch Southern pine—square yards	840	1,081.08
Paving blocks, 4 inch Southern pine—square yards	770	1,114.19
		<b>\$9,563.64</b>

## SUMMARY

Paving repairs	*\$3,394.51
Laurel av warehouse	2,503.69
Granite curb	602.81
New pavement	1,304.63
Creosoted pavement	48.00
Paving tools	1,710.00
Total	<b>\$9,563.64</b>
Total Stark ledger	<b>\$6,169.13</b>
*—\$3,394.51 not in Starks' ledger.	

TABLE NO. 11  
ASPHALT PLANT, TOOLS AND MATERIAL, DECEMBER 31, 1914

Kind	Number	Value
Asphalt plant, portable	1	\$12,000.00
Asphalt axes	18	9.00
Asphalt, Magnolia, 653 barrels—lbs	239,984	2,231.85
Asphalt, Texaco, 173 barrels—lbs	56,521	525.65
Brooms, fibre push	6	4.50
Dipper, 9 quart	1	.15
Flue cleaner, 2 inch	1	2.00
Hammers, claw	2	1.00
Hose, steam, ½ inch—feet	12	2.00
Hose, water, 1 inch—feet	100	15.00
Kettle, 100 gallon portable	1	65.00
Lanterns	5	2.50
Oiler	1	.25
Padlocks	2	1.00
Pails, galvanized iron	6	.90
Picks and handles	12	9.00
Rakes, asphalt	12	9.00
Roller, 1,000 pound hand	1	75.00
Roller, Iroquois steam tandem	1	2,000.00
Smoothing irons	6	12.00
Stove, air tight	1	2.50
Surface heater	1	100.00
Shovels, square	2	1.50
Shovels, scoop	2	1.00
Square, steel	1	.50
Tampers	12	12.00
Wagons, Troy patent dump	12	1,200.00
Wagon, fire	1	75.00
Wagon, sand spreader	1	250.00
Wheelbarrows	2	5.00
		<b>\$18,613.30</b>



TABLE NO. 12

## MATERIAL ON HAND IN CONNECTION WITH CRUSHER, DECEMBER 31, 1914

Kind	Number	Value
Ax, long handled.....	1	\$0.60
Aurora crusher, screens, elevator and bins.....	1	1,000.00
Bar.....	1	.75
Belt, 8 inch rubber drive—feet.....	44	12.00
Belt, 6 inch rubber elevator—feet.....	18	3.60
Belt, 8 inch cotton—feet.....	70	3.00
Jump wagon boxes, 2 cubic yards.....	4	140.00
Cars, steel.....	2	50.00
Pick ax.....	1	.50
Shovels.....	6	8.25
Lumber enclosing engine, miscellaneous sizes.....		58.00
Track and switches—feet.....	105	100.00
Traction engine, J. I. Case.....	1	1,000.00
Wheelbarrows.....	6	15.00
Pipe, 1 inch bl. iron—feet.....	900	38.25
		<hr/>
		\$2,421.95

TABLE No. 13

SUMMARY OF ALL CURB AND GUTTER SET AND IN PLACE JANUARY 1, 1915

	Number		Length		Cost
	Curb Cor- ners	Catch Basin Covers	Miles and 1000ths	Feet and 100ths	
Kettle River sandstone.....	.....	.....	60.160	317,661.00	\$282,434.95
"Limestone.....	.....	.....	26.103	137,825.00	176,971.16
Combined curb and gutters, artificial.....	.....	.....	605.789	3,198,388.90	1,210,031.65
Granolithic curb, artificial.....	.....	.....	3.063	16,174.5	11,425.67
Cement curb, artificial.....	.....	.....	0.446	2,356.20	2,308.98
Granite curb.....	.....	.....	40.156	212,037.00	193,701.72
**Catch basin covers.....	.....	1,007	.....	.....	.....
**Curb corners.....	688	.....	.....	.....	.....
Total curb, corners and catch- basin covers set in the city...	688	1,007	735.717	3,884,442.68	\$1,876,874.13
Limestone curb, corners and catch basins replaced by granite.....	342	524	18.716	98,823.27	\$126,015.86
Limestone curb, corners and catch basin covers replaced by sandstone.	113	232	1.809	9,551.13	13,285.90
Total limestone curb, corners and catch basin covers replaced by other curb.....	455	752	20.525	108,374.40	\$139,301.76
Total curb, corners and covers in place in the city.....	233	251	715.192	3,776,068.28	\$1,737,572.37

\*Total number of feet set in city previous to 1900.

\*\*Total number set in city previous to 1900.

TABLE No. 14  
CURB AND GUTTER SET DURING THE YEAR 1914 AND ASSESSED IN THE TAXES OF 1914

Street	From	To	Kind	Depth of Stone in Inches	Depth of Gutter in Inches	Width of Gutter in Inches	Thick-ness of Curb in Inches	Cost Price per Lineal Foot		Length		Cost	Amount of Assessment
								Straight	Radius	Straight	Radius		
								Curb	Curb	Feet	Feet		
Abbott av S.	44th st.	46th st.	Artificial	14.5	8	12	5.5	\$0.35		2,096.3		\$733.71	\$665.00
Aldrich av N.	Linden av	Laurel av	Artificial	14.5	8	12	5.5	.35		1,056.7		369.84	300.50
Aldrich av N.	26th av	31st av	Artificial	14.5	8	12	5.5	.35		2,409.1		843.19	970.83
Aldrich av S.	40th st.	42nd st.	Artificial	14.5	8	12	5.5	.35		2,240.6		784.21	727.44
Aldrich av S.	28th st.	Lake st.	Artificial	14.5	8	12	5.5	.35		1,635.5		572.42	631.96
Ash st.	Oliver av	Cedar Lake rd.	Artificial	14.5	8	12	5.5	.35		2,546.9		891.42	868.14
Ash st.	Oliver av	Laurel av	Artificial	14.5	8	12	5.5	.16		200.9		47.13	
Baker pl.	Humboldt av N.	Irvine av N.	Artificial	14.5	8	12	5.5	.35		857.3		300.05	282.03
Barton av	Melbourne av	Malcolm av	Artificial	14.5	8	12	5.5	.35		380.4		136.64	
Basett pl.	8th av N.	11th av N.	Artificial	14.5	8	12	5.5	.35		1,659.8		580.93	631.82
Beacon st.	Walnut st.	Oak st.	Artificial	14.5	8	12	5.5	.35		539.3		209.70	173.25
Blaisdell av	40th st.	42nd st.	Artificial	14.5	8	12	5.5	.35		2,030.5		710.67	647.22
Bryant av N.	Laurel av	Hawthorne av.	Artificial	14.5	8	12	5.5	.35		575.5		210.43	210.00
Bryant av N.	33rd av	38th av	Artificial	14.5	8	12	5.5	.35		6,099.9		2,134.96	1,986.64
Bryant av S.	28th st.	Lake st.	Artificial	14.5	8	12	5.5	.35		2,077.5		727.13	679.95
California st. NE.	Lowry av	27th av	Artificial	14.5	8	12	5.5	.35		2,068.7		724.04	712.92
Cedar Lake rd.	37th st.	38th st.	Artificial	14.5	8	12	5.5	.35		639.9		223.97	
Cedar Lake rd.	Western av	R. R. bridge	Artificial	14.5	8	12	5.5	.35		3,620.2		1,267.29	1,186.29
Chowen av S.	Cedar Lake av.	Lake st.	Artificial	14.5	8	12	5.5	.35		3,212.2		1,124.27	940.77
Cleveland st.	18th av NE.	19th av NE.	Artificial	14.5	8	12	5.5	.35		605.8		212.03	422.24
Clinton av	33rd st.	38th st.	Artificial	14.5	8	12	5.5	.35		3,173.5		1,110.72	1,029.21
Colfax av N.	33rd st.	36th av	Artificial	14.5	8	12	5.5	.35		2,548.6		892.01	1,245.02
Colfax av S.	26th st.	Lake st.	Artificial	14.5	8	12	5.5	.35		1,945.5		680.93	748.44
Colfax av S.	46th st.	19th st.	Artificial	14.5	8	12	5.5	.35		3,820.2		1,337.07	1,255.52
Como av	29th av SE	City limits.	Artificial	14.5	8	12	5.5	.35		2,554.3		894.00	
Dartmouth av.	River rd.	27th av SE	Artificial	14.5	8	12	5.5	.35		2,178.9		762.62	705.32
DuPont av S.	35th st.	36th st.	Artificial	14.5	8	12	5.5	.35		1,074.4		376.04	412.02
11th av S.	40th st.	44th st.	Artificial	14.5	8	12	5.5	.35		5,090.3		1,781.60	
11th av S.	5th st.	6th st.	Artificial	14.5	8	12	5.5	.35		250.1		87.53	107.28
11th av S.	34th st.	36th st.	Artificial	14.5	8	12	5.5	.35		250.1		87.53	829.90
Elm st.	Erie av.	Cedar Lake rd.	Artificial	14.5	8	12	5.5	.35		1,319.4		461.79	454.86

Elroy st.	Nicollet av.	Blaisdell av.	14.5	8	12	5.5	35	761.2	206.42	2485
Emerson av S	26th st.	27th st.	Artificial	8	12	5.5	35	80.0	10.40	10.43
Emerson av S	26th st.	27th st.	Artificial	8	12	5.5	35	2,733.9	759.06	732.01
Erie st.	Oliver av.	Elm st.	Artificial	8	12	5.5	35	4,543.7	1,560.26	1,463.26
Essex st.	River rd.	Washington av.	Artificial	8	12	5.5	35	309.0	108.15	80.50
11th st.	Union st.	Harvard st.	Artificial	8	12	5.5	34	1,403.7	471.19	471.19
Franklin av.	Mary pl.	Hennepin av.	Artificial	8	12	5.5	35	4,706.6	1,179.56	793.31
Franklin av.	4th av S.	10th av S.	Artificial	8	12	5.5	35	2,131.6	746.06	793.31
Franklin av.	23rd av S.	27th av S.	Artificial	8	12	5.5	35	370.23	370.23	158.48
Franklin ter.	29th av S.	30th av S.	Artificial	8	12	5.5	35	1,157.5	835.24	834.47
Fremont av.	Western av.	6th av N.	Artificial	8	12	5.5	30	2,386.4	801.77	236.46
Fremont av S.	34th st.	36th st.	Artificial	8	12	5.5	09	1,005.9	477.51	477.51
1st av S.	Grant st.	24th st.	Artificial	8	12	5.5	35	5,350.9	433.55	411.67
1st av S.	36th st.	37th st.	Artificial	8	12	5.5	35	1,238.7	1,084.30	988.54
4th av S.	35th st.	38th st.	Artificial	8	12	5.5	35	3,098.0	1,173.23	1,057.81
4th av NE.	22nd av.	26th av.	Artificial	8	12	5.5	35	3,352.1	2,483.99	2,483.99
5th av S.	Collfax av.	Penn av.	Artificial	8	12	5.5	35	7,097.1	2,284.10	2,131.01
5th st NE.	15th av.	Lowry av.	Artificial	8	12	5.5	24	6,526.0	27.50	875.10
5th st NE.	15th av.	17th av.	Artificial	8	12	5.5	1.00	113.2	1,162.70	875.10
5th st S.	15th av.	8th av.	Artificial	8	12	5.5	35	1,162.7	189.91	875.10
4th av S.	At 11th st.	Oliver av.	Artificial	8	12	5.5	35	109.0	960.47	876.92
14th av N.	Janes av.	Thomas av.	Artificial	8	12	5.5	35	2,744.2	360.04	360.04
14th av N.	Russell av.	Powder Horn pk.	Artificial	8	12	5.5	35	1,126.7	996.06	996.06
14th av S.	Lake st.	36th st.	Artificial	8	12	5.5	35	1,294.7	453.15	417.48
15th av N.	Janes av.	Penn av.	Artificial	8	12	5.5	35	3,294.5	1,153.07	1,056.65
15th av S.	28th st.	29th st.	Artificial	8	12	5.5	35	327.60	305.97	305.97
15th av S.	35th st.	36th st.	Artificial	8	12	5.5	35	1,289.2	451.22	417.55
42nd av S.	49th st.	51st st.	Artificial	8	12	5.5	35	2,419.5	846.83	722.72
42nd st W.	Aldrich av.	Bryant av.	Artificial	8	12	5.5	35	639.2	223.72	183.40
42nd st W.	Vincent av.	Alley bet. Vincent and Washburn.	Artificial	8	36	5.5	62	1,276.0	446.60	183.48
43rd st W.	Upton av.	Boulevard	Artificial	8	12	5.5	35	1,194.8	418.18	393.79
44th av S.	Lake st.	29th st.	Artificial	8	12	5.5	35	304.6	106.61	94.09
44th st W.	Collfax av.	Dupont av.	Artificial	8	12	5.5	35	960.7	336.25	325.37
44th st W.	Thomas av.	Boulevard	Artificial	8	12	5.5	35	652.9	437.44	437.44
44th st W.	Upton av.	Thomas	Artificial	8	12	5.5	35	1,829.2	639.17	639.17
44th st W.	Xerxes av.	Upton av.	Artificial	8	12	5.5	35	4,997.8	1,609.23	1,392.38
44th st S.	28th av.	34th av.	Artificial	8	12	5.5	35	1,410.1	493.53	493.53
46th av.	Cake st.	Seabury av.	Artificial	8	12	5.5	35	438.3	131.55	131.55
46th st W.	Collfax av.	Emerson av.	Artificial	8	12	5.5	35	5,257.2	1,833.37	1,491.09
50th st E.	28th av.	24th av.	Artificial	8	12	5.5	35	213.4	443.69	413.37
50th st E.	22nd st.	24th st.	Artificial	8	12	5.5	35	1,273.4	416.53	283.60
Girard av.	30th av.	Lowry av.	Artificial	8	12	5.5	35	1,190.1	416.53	283.60
Girard av N.	41st av.	41st av.	Artificial	8	12	5.5	35	1,190.1	416.53	283.60
Girard av S.	Lake st.	31st st.	Artificial	8	12	5.5	35	1,190.1	416.53	283.60

TABLE No. 14—Continued  
CURB AND GUTTER SET DURING THE YEAR 1914 AND ASSESSED IN THE TAXES OF 1913

Street	From	To	Kind	Depth of Slope Inches	Depth of Gutter in Inches	Width of Gutter in Inches	Thick- ness of Curb in Inches	Cost Price per Lineal Foot		Length		Cost	Amount of Assess- ment
								Straight Curb	Radius Curb	Straight Feet	Radius Feet		
Hiawatha av.	15th st. and 13th st.	38th av. S.	Artificial	14.5	8	12	5.5	35		207.0		72.45	
Hennepin av.	Cecil st.	15th st.	Sandstone	14.5	8	12	5.5	26.76		164.3		51.07	651.07
Hamline av.	29th st.	Railroad	Artificial	14.5	8	12	5.5	.35		2,931.8		1,026.13	934.33
Harriet av.	Fulton st.	Cake st.	Artificial	14.5	8	12	5.5	.35		1,709.5		377.93	434.70
Harvard st.	Cedar Lake rd.	Ossex st.	Artificial	14.5	8	12	5.5	.35		2,227.1		777.93	871.75
Hawthorn av.	9th av.	Silver av.	Artificial	14.5	8	12	5.5	.35		1,234.0		233.34	264.44
Hong av N.	28th st.	29th st.	Artificial	14.5	8	12	5.5	.35		603.9		438.30	420.00
Humboldt av S.	Central av.	Lyndale av.	Artificial	14.5	8	12	5.5	.35		242.3		211.37	331.21
Huron av.	Central av.	Maple pl.	Artificial	14.5	8	12	5.5	.35		2,411.3		83.80	
Island av W.	Broadway st.	26th av. N.	Artificial	14.5	8	12	5.5	.35		1,789.2		343.96	565.32
Jackson st.	24th av. N.	26th av. N.	Artificial	14.5	8	12	5.5	.35		1,965.1		496.22	566.34
Jewett pl.	Hennepin av.	24th av. N.	Artificial	14.5	8	12	5.5	.35		2,438.6		453.21	504.42
Lincoln st.	Lowry av.	28th av.	Artificial	14.5	8	12	5.5	.35		3,704.9		952.81	723.66
Longfellow av	37th st.	38th st.	Artificial	14.5	8	12	5.5	.35		3,239.3		1,906.61	1,503.04
Lowry av NE	Main st.	53rd st.	Artificial	14.5	8	12	5.5	.35		2,373.5		333.06	415.31
Lyndale av N.	15th st.	15th st.	Artificial	14.5	8	12	5.5	1.00	1.10	3,329.3	74.9	330.79	260.50
Lyndale av	6th av. N.	30th av. N.	Artificial	14.5	8	12	5.5	.35		3,411.65		3,411.65	2,604.50
Lyndale pl.	Orin av.	Malcolm av.	Artificial	14.5	8	12	5.5	.35		1,041.18		444.40	
Malbourne av.	Barton av.	Malcolm av.	Artificial	14.5	8	12	5.5	.35		2,066.6		1,038.31	1,001.25
Malcolm av.	38th st.	Malbourne av.	Artificial	14.5	8	12	5.5	.35		1,535.6		537.46	517.69
McDonna av.	Hennepin av.	Hawthorn av.	Artificial	14.5	8	12	5.5	.35		2,692.9		942.51	846.02
9th st. N.	Hennepin av.	Alameda R. R.	Artificial	14.5	8	12	5.5	.46	1.31	183.2	37.6	250.34	
Newton av N.	26th av.	26th av.	Artificial	14.5	8	12	5.5	.35		199.9		69.97	74.74
Nicollet av	24th st.	39th st.	Artificial	14.5	8	12	5.5	.35		275.6		96.46	87.50
19th av NE	24th st.	39th st.	Artificial	14.5	8	12	5.5	.35		5,745.4		2,010.89	1,893.47
19th av NE	30th st.	30th st.	Artificial	14.5	8	12	5.5	.35		7,181.7		2,986.54	931.11
19th av S.	30th st.	30th st.	Artificial	14.5	8	12	5.5	.35		5,055.7		1,769.50	1,471.82
19th av S.	30th st.	30th st.	Artificial	14.5	8	12	5.5	.35		5,055.7		1,769.50	1,471.82
19th av S.	30th st.	30th st.	Artificial	14.5	8	12	5.5	.35		1,268.5		443.98	415.94
Oliver av N.	Lyndale av.	Aldrich av.	Artificial	14.5	8	12	5.5	.35		1,391.6		137.06	110.15
Penn av.	Ash st.	Laurel av.	Artificial	14.5	8	12	5.5	.35		1,294.2		432.97	480.93
	Cedar Lake rd.	Hawthorne av.	Artificial	14.5	8	12	5.5	.35		1,166.3		404.71	364.53

Pillsbury av.	40th st.	42nd st.	Artificial	14.5	8	12	5.5	35	2,567.2	898.52	838.38
Pleasant av.	26th st.	27th st.	Artificial	14.5	8	12	5.5	35	1,252.6	150.31	138.20
Queen av.	Chas. Lake av.	28th st.	Artificial	14.5	8	12	5.5	35	901.4	315.49	279.30
Riverside av.	28th av.	29th st.	Artificial	14.5	8	12	5.5	35	767.5	268.73	236.25
Russell av. N.	McNair av.	30th st.	Artificial	14.5	8	12	5.5	35	4,668.5	1,563.97	1,614.87
Rustic Lodge av.	Nicollet av.	Pleasant av.	Artificial	14.5	8	12	5.5	35	1,506.9	527.42	536.82
Seabury av.	Franklin av.	24th st.	Artificial	14.5	8	12	5.5	35	3,704.9	1,296.72	584.50
Seabury av.	At 24th st.	24th st.	Artificial	14.5	8	12	5.5	35	61.9	13.50	•
Seymour av.	N line P. P. hgis	Hamline av.	Artificial	14.5	8	12	5.5	35	1,292.0	452.20	363.27
Sheridan av. N.	16th av.	17th av.	Artificial	14.5	8	12	5.5	35	1,313.0	459.65	422.84
Sheridan av. N.	19th av.	21st av.	Artificial	14.5	8	12	5.5	35	•	417.31	417.31
Sheridan av. S.	Kenwood pkwy	Franklin	Artificial	14.5	8	12	5.5	35	1,097.0	698.95	623.32
Sheridan av. S.	41st st.	42nd st.	Artificial	14.5	8	12	5.5	35	106.8	37.38	32.90
Shelling av.	34th st.	42nd st.	Artificial	14.5	8	12	5.5	35	5,491.0	1,921.85	1,754.94
Stevens av.	38th st.	40th st.	Artificial	14.5	8	12	5.5	35	6,634.5	2,322.18	2,101.14
Stevens av.	35th st.	36th st.	Artificial	14.5	8	12	5.5	12	230.0	27.60	24.60
Stewart av.	Oliver av.	Penn av.	Artificial	14.5	8	12	5.5	35	368.6	129.01	114.24
2nd av N.	Lyndale av.	Dupont av.	Artificial	14.5	8	12	5.5	35	2,230.1	780.54	795.87
2nd av S.	17th st.	22nd st.	Artificial	14.5	8	12	5.5	35	3,446.0	269.74	449.29
2nd av S.	35th st.	36th st.	Artificial	14.5	8	12	5.5	35	1,283.7	412.62	412.62
6th st N.	29th av.	31st av.	Artificial	14.5	8	12	5.5	35	1,525.3	533.85	472.22
6th st N.	29th av.	30th av.	Artificial	14.5	8	12	5.5	35	•	•	•
Superior av.	Hennepin av.	17th st.	Sandstone	14.5	8	12	5.5	33-83	226.0	120.13	130.13
6th st NE.	19th av.	22nd av.	Artificial	14.5	8	12	5.5	35	1,782.7	623.94	575.58
16th av N.	James av.	Penn av.	Artificial	14.5	8	12	5.5	35	3,443.2	1,205.12	794.64
16th av N.	Russell av.	Thomas av.	Artificial	14.5	8	12	5.5	35	•	•	361.34
16th av NE.	Marshall st.	Main st.	Artificial	14.5	8	12	5.5	35	1,699.0	594.65	516.67
16th av S.	Way bet 36 & 37 st	37th st.	Artificial	14.5	8	12	5.5	35	758.6	265.51	249.62
17th av N.	Penn av.	Vincent av.	Artificial	14.5	8	12	5.5	35	3,712.6	1,087.66	1,087.66
17th av S.	36th st.	37th st.	Artificial	14.5	8	12	5.5	35	1,197.1	1,299.41	1,383.11
17th av NE.	6th st.	Washington st.	Artificial	14.5	8	12	5.5	14	130.2	418.99	•
Thomas av N.	19th av.	14th av.	Artificial	14.5	8	12	5.5	35	1,875.1	656.28	628.88
Thomas av N.	McNair av.	McNair av.	Artificial	14.5	8	12	5.5	35	1,895.8	663.53	628.78
Tyler st.	29th av NE.	30th av NE.	Artificial	14.5	8	12	5.5	35	1,201.9	420.87	420.87
3rd st NE.	18th av.	Lowry av.	Artificial	14.5	8	12	5.5	35	4,335.6	1,517.46	1,456.53
3rd av S.	36th st.	37th st.	Artificial	14.5	8	12	5.5	35	686.4	240.24	218.68
10th av S.	40th st.	41st st.	Artificial	14.5	8	12	5.5	35	1,287.5	450.62	416.36
13th av NE.	Marshall st.	Washington st.	Artificial	14.5	8	12	5.5	35	4,089.4	667.87	•
13th av S.	35th st.	36th st.	Artificial	14.5	8	12	5.5	35	1,286.5	450.28	417.62
13th av SE.	University av.	4th st.	Artificial	14.5	8	12	5.5	35	685.5	239.92	231.00
20th av NE.	2nd st.	5th st.	Artificial	14.5	8	12	5.5	35	2,904.9	1,016.72	929.99
20th av S.	Lake st.	32nd st.	Artificial	14.5	8	12	5.5	35	2,509.0	878.15	827.96
20th av S.	34th st.	36th st.	Artificial	14.5	8	12	5.5	35	2,476.2	866.67	826.91
21st av S.	Penn av.	Russell av.	Artificial	14.5	8	12	5.5	35	•	•	359.94
22nd av NE.	2nd st.	Monroe st.	Artificial	14.5	8	12	5.5	35	6,430.0	2,250.78	1,896.69
722nd av NE.	Johnson st.	Stinson blvd.	Artificial	14.5	8	12	5.5	35	4,274.9	1,496.21	1,497.69

TABLE No. 14—Continued  
CURB AND GUTTER SET DURING THE YEAR 1914 AND ASSESSED IN THE TAXES OF 1913

Street	From	To	Kind	Depth of Stone in Inches	Depth of Gutter in Inches	Width of Gutter in Inches	Thick- ness of Curb in Inches	Cost Price per Lineal Foot		Length		Cost	Amount of Assess- ment
								Straight Curb	Radius Curb	Straight Curb	Radius Curb		
22nd av S.	35th st.	36th st.	Artificial	14.5	8	12	5.5	35		1,320.9		402.32	417.70
22nd av SE.	Conno av.	Fairmount st.	Artificial	14.5	8	12	5.5	35		1,701.1		420.40	385.03
23rd av N.	Fremont av.	Irving av.	Artificial	14.5	8	12	5.5	35		1,482.7		406.04	383.92
23rd av NE.	Madison st.	Monroe st.	Artificial	14.5	8	12	5.5	35		2,018.8		292.50	263.54
23rd av S.	35th st.	36th st.	Artificial	14.5	8	12	5.5	35		5,023.0		927.08	750.44
24th av S.	31st st.	36th st.	Artificial	14.5	8	12	5.5	35		3,009.0		1,758.05	1,540.58
24th av W.	Pleasant av.	Harriet av.	Artificial	14.5	8	12	5.5	35		373.1		234.40	241.07
24th at E.	Cedar av.	Hinewatha av.	Artificial	14.5	8	12	5.5	35		2,510.3		130.64	105.90
26th av N.	Penn av.	Cedar av.	Artificial	14.5	8	12	5.5	35		2,81.5		889.11	700.12
26th av NE.	Monroe st.	Crystal Lake av.	Artificial	14.5	8	12	5.5	35		1,908.8		293.52	183.33
26th av N.	Buchanan st.	Johnson st.	Artificial	14.5	8	12	5.5	35		1,111.7		689.08	714.31
27th av N.	Emerson av.	Girard av.	Artificial	14.5	8	12	5.5	35		1,083.2		370.12	304.14
27th av SE.	Dartmouth av.	Hamline av.	Artificial	14.5	8	12	5.5	35		2,335.8		293.30	350.72
27th at E.	Chicago av.	Cedar av.	Artificial	14.5	8	12	5.5	35		5,058.3		1,770.40	1,050.30
28th at W.	Emerson av.	DuPont av.	Artificial	14.5	8	12	5.5	35		127.5		16.38	10.43
28th at E.	28th st.	Lake st.	Artificial	14.5	8	12	5.5	35		2,450.0		800.65	801.85
28th av N.	Chicago av.	Cedar av.	Artificial	14.5	8	12	5.5	35		4,270.2		1,197.72	1,307.01
28th av S.	DuPont av.	Girard av.	Artificial	14.5	8	12	5.5	35		1,000.5		583.28	533.80
28th at E.	Lake st.	Lake st.	Artificial	14.5	8	12	5.5	35		2,485.1		800.80	800.14
30th at N.	27th av.	20th av.	Artificial	14.5	8	12	5.5	35		1,378.0		482.01	440.00
30th av N.	3rd st.	4th st.	Artificial	14.5	8	12	5.5	35		724.1		253.64	231.00
30th av NE.	Emerson av.	Irving av.	Artificial	14.5	8	12	5.5	35		2,210.5		775.67	707.77
30th at S.	Central av.	Polk st.	Artificial	14.5	8	12	5.5	35		1,107.0		408.00	339.50
31st at W.	Pleasant av.	34th st.	Artificial	14.5	8	12	5.5	35		5,180.5		407.39	414.02
31st at E.	Pleasant av.	Hennepin av.	Artificial	14.5	8	12	5.5	35		2,405.0		1,816.33	1,441.48
32nd av S.	46th st.	40th st.	Artificial	14.5	8	12	5.5	35		1,240.8		301.64	490.31
33rd av S.	38th st.	38th st.	Artificial	14.5	8	12	5.5	35		1,240.2		448.07	416.90
33rd at S.	42nd st.	44th st.	Artificial	14.5	8	12	5.5	35		2,052.4		800.84	822.43
34th at	Chicago av.	Colfax av.	Artificial	14.5	8	12	5.5	35		4,102.0		1,407.01	1,260.48

35th st.	Park av.	Nicollet av.	14.5	8	12	5.5	35	4,570.7	1,598.75	1,471.51
35th st.	Blaisdel av.	Pillsbury av.					17	117.4	19.96	14.11
36th st.	Bloomington av	17th av	14.5	8	12	5.5	35	649.3	227.25	214.83
36th st.	Chicago av	Portland av	14.5	8	12	5.5	35	2,128.8	745.43	628.57
37th st.	Nicollet av	Pleasant av	14.5	8	12	5.5	35	2,290.1	801.54	705.67
38th st.	Bloomington.	20th av S.	14.5	8	12	5.5	35	3,453.9	1,558.86	1,233.89
39th st.	Chicago av	12th av S.	14.5	8	12	5.5	35	2,132.6	774.91	695.24
University av NE	Broadway st.	Lowry av	14.5	8	12	5.5	35	9,190.5	3,216.68	2,554.32
University av NE	33rd av	15th av					14	157.5	225.05	221.91
Upton av S	Plymouth av.	14th av	14.5	8	12	5.5	35	628.5	219.27	203.28
Upton av S	Franklin av	Thomas av	14.5	8	12	5.5	35	1,038.5	368.39	297.53
Upton av S	44th st.	Artificial	14.5	8	12	5.5	35	2,824.5	987.5	808.5
Upton av S	Lyndale av	Byrant av	14.5	8	12	5.5	35	624.0	228.96	180.61
Upton av S	Washington av	18th on st.	14.5	8	12	5.5	35	74.0	269.38	231.00
Washington av S	46th st.	Artificial	14.5	8	36	5.5	62	1,257.9	786.10	725.65
Washington st	18th av NE	19th av NE	14.5	8	12	5.5	35	2,572.8	200.48	205.10
Washington st	Lowry av NE	27th av NE	14.5	8	12	5.5	35	1,986.4	695.24	630.25
Wentworth st	40th st	Artificial	14.5	8	12	5.5	35	1,281.3	448.46	413.98
Wentworth av	51st st.	52nd st.	14.5	8	12	5.5	35	1,346.4	121.24	113.61
Willow st.	14th st.	Artificial	14.5	8	12	5.5	35	1,064.4	372.54	115.50
Xerxes av S.	Railroad	44th st.					23	179.2	40.97	0.
Total.								386,652.2	\$127,451.31	\$118,697.68

†To be assessed in 1915.  
#Part not built.  
‡Not built.

†Elwell law.  
 ‡P. I. F. bond.  
 ■Assessed in 1913.

- Moved.
- § Parks.
- Sandstone moved.



## INVENTORY ARTIFICIAL CURB AND GUTTER TOOLS, 1914

Street corner molds, 36; driveway molds, 22; gutter molds, 2,980 feet; wood box wheelbarrows, 14.....	\$162.60
Iron box wheelbarrows, 5; tool boxes, 17; picks, 109; handles, 100; mixing hoes, 2; shovels, 127; scoop shovels, 43; rubber hose, 380 feet; gutter spreaders, 151; mold spreaders, 244; hand saws, 8; sand screens, 4.....	334.65
Sprinkling cans, 9; water pails, 8; water barrels, 1; street molds 1,694; carpenters' squares, 2.....	243.56
Pointing trowels, 6; smoothing trowels, 11; gutter trowels, 5; round corner trowels, 8; lanterns, 76; globes, 71.....	54.54
Oil cans, 24; grub axes, 5; hand axes, 7; long handled axes, 4.....	17.65
Tin funnels, 6; jack planes, 4; tarpaulins, 23; files, 6; 24-inch hook clamps, 46; 12 inch spring clamps, 164; 8 inch hook clamps, 112; steel stakes, 586; wooden stakes, 278; saw sets, 1; wedges, 10.....	433.15
Mold links, 139; cutting knives, 6; tin cement dusters, 1; spirit levels, 10; dippers, 8; tampers, 8; branding irons, 4; ampere meters, 3.....	95.37
Concrete power mixers, 9; concrete hand mixers, 1.....	1,942.00
Crow bars, 6; cold chisels, 5; B. S. hammers, 16; sand heaters, 3; rolls of building paper, 14; braces, 1; sledge hammers, 18; claw hammers, 3; $\frac{1}{4}$ inch iron pipe, 2,390 feet; churn drills, 4.....	122.15
Plows, 6; pinchers, 1; pliers, 3; screw drivers, 4; slush scrapers, 6; wrenches, 21; plow points, 12; platforms, 8.....	159.35
	<hr/>
	\$3,565.02

TABLE No. 15  
SUMMARY OF SEWERS BUILT PRIOR TO JANUARY 1, 1915

Kind of Sewers	Size in Inches	Total Lengths	
		Feet	Feet
A			
COMBINED SYSTEM			
Vitrified clay pipe . . . . .	9	39,230.4	1,050,465.1 134.7
Vitrified clay pipe . . . . .	10	578.1	
Vitrified clay pipe . . . . .	12	368,301.9	
Vitrified clay pipe . . . . .	15	298,905.2	
Vitrified clay pipe . . . . .	18	213,433.2	
Vitrified clay pipe . . . . .	20	42,708.4	
Vitrified clay pipe . . . . .	22	25,138.3	
Vitrified clay pipe . . . . .	24	42,631.5	
Vitrified clay pipe . . . . .	27	11,765.1	
Vitrified clay pipe . . . . .	30	6,142.9	
Vitrified clay pipe . . . . .	33	1,630.1	169,645.5
Cast iron pipe . . . . .	16	134.7	
Cement . . . . .	12	96,421.5	
Cement . . . . .	15	52,106.0	
Cement . . . . .	18	19,934.1	
Cement . . . . .	24	1,183.9	
Brick . . . . .	18	46.7	
Brick . . . . .	20	30.4	
Brick . . . . .	24	285,460.3	
Brick . . . . .	27	10,792.7	
Brick . . . . .	30	72,176.7	561,078.8
Brick . . . . .	33	25,083.4	
Brick . . . . .	36	40,056.2	
Brick . . . . .	39	5,847.6	
Brick . . . . .	40	3,872.2	
Brick . . . . .	42	12,213.7	
Brick . . . . .	44	3,675.5	
Brick . . . . .	45	3,167.2	
Brick . . . . .	48	8,201.5	
Brick . . . . .	51	9,239.0	
Brick . . . . .	54	11,624.5	
Brick . . . . .	60	21,011.4	
Brick . . . . .	63	1,318.6	
Brick . . . . .	65	3,215.6	
Brick . . . . .	66	3,311.3	
Brick . . . . .	72	10,463.1	
Brick . . . . .	75	1,309.9	
Brick . . . . .	78	1,688.7	
Brick . . . . .	80	466.0	
Brick . . . . .	84	1,296.6	
Brick . . . . .	86	1,604.0	
Brick . . . . .	87	590.3	
Brick . . . . .	90	7,781.3	
Brick . . . . .	93	978.9	
Brick . . . . .	96	14,555.5	
Reinforced concrete . . . . .	36	11,549.2	
Reinforced concrete . . . . .	39	3,508.8	
Reinforced concrete . . . . .	42	13,885.8	
Reinforced concrete . . . . .	45	2,509.0	
Reinforced concrete . . . . .	48	6,961.3	
Reinforced concrete . . . . .	51	2,183.4	
Reinforced concrete . . . . .	52	2,139.8	
Reinforced concrete . . . . .	54	8,893.0	
Reinforced concrete . . . . .	57	4,799.3	
Reinforced concrete . . . . .	60	11,221.5	
Reinforced concrete . . . . .	63	1,937.5	
Reinforced concrete . . . . .	66	8,989.9	
Reinforced concrete . . . . .	69	1,158.1	
Reinforced concrete . . . . .	72	9,814.4	
Reinforced concrete . . . . .	75	2,020.9	
Reinforced concrete . . . . .	77	400.5	
Reinforced concrete . . . . .	78	2,207.2	
Reinforced concrete . . . . .	90	6,984.9	
Reinforced concrete . . . . .	99	2,922.1	

**TABLE No. 15—Continued**  
**SUMMARY OF SEWERS BUILT PRIOR TO JANUARY 1, 1915**

Kind of Sewers	Size in Inches	Total Length	
		Feet	Feet
<b>A</b>			
<b>COMBINED SYSTEM</b>			
Reinforced concrete.....	105	2,612.9	117,757.4
Reinforced concrete.....	111	7,383.8	
Reinforced concrete.....	120	3,674.1	
<b>B</b>			
<b>SEPARATE SYSTEM</b>			
Vitrified clay pipe.....	9	26,581.2	51,727.3
Vitrified clay pipe.....	12	5,531.8	
Vitrified clay pipe.....	15	3,837.7	
Vitrified clay pipe.....	18	6,098.3	
Vitrified clay pipe.....	24	9,678.3	
Cement pipe.....	12	622.6	1,268.4
Cement pipe.....	15	645.8	
<b>C</b>			
<b>STORM WATER SYSTEM</b>			
Vitrified clay pipe.....	30	1,208.1	1,208.1
Total number of feet.....			1,953,285.3
Total number of miles.....			369.919
Total number of manholes.....			13,597
Total number of lampholes.....			485
Total number of catch basins.....			8,824
Total number of flush tanks.....			81

TABLE No. 15—Continued  
TUNNELS

Street	From	To	Length in Feet
8th av NE.....	2nd st.....	University av.....	285.9
8th av S.....	River.....	Washington av.....	860.0
11th av S.....	River.....	218.4 ft. N of 2nd st.....	645.0
4th st S.....	River.....	21st av S.....	940.0
10th av S.....	River.....	2nd st.....	473.0
N. E. Minneapolis.....			7,235.3
Oak st.....			279.7
2nd st NE.....	Central av.....	Broadway st.....	4,550.0
E. 26th St.....	River.....	Riverside av.....	452.5
N. Minneapolis.....			7,256.5
3rd av NE.....	River.....	89.5 ft. E of Jackson st.....	3,536.7
University av NE.....	1st av NE.....	3rd av NE.....	787.0
4th st NE.....	1st av NE.....	3rd av NE.....	710.4
1st av N.....	River.....	1st st.....	690.2
2nd st S.....	22nd av S.....	21st av S.....	326.7
4th av SE.....	Mill race.....	Main st sewer.....	134.0
Lenox st.....	River.....	St. Anthony blvd.....	340.0
Franklin av.....	River.....	Franklin av.....	221.0
E 38th st.....	River.....	River blvd.....	334.0
Lake st.....	River.....	River blvd.....	217.8
East River blvd.....	River.....	River blvd.....	270.3
2nd av S.....	4th st.....	Shaft.....	58.7
Nicollet av.....	Center of 4th st.....	Center of 7th st.....	1,227.4
Riverside pk.....	River.....	Shaft in Riverside pk.....	196.5
Total feet.....			32,158.6
Total miles.....			6.090
Total sewers and tunnels, feet.....			1,985,463.9
Total sewers and tunnels, miles.....			376.101

TABLE No. 16  
MAINTENANCE AND REPAIRS OF SEWERS, 1914

Cleaning sewers.....	\$27,194.85
Flushing sewers.....	4,572.25
Examining sewers.....	3,579.25
Thawing catch basins.....	1,369.00
Examining and cleaning catch basins.....	2,402.50
Care of barn.....	342.25
Care of autos.....	210.00
Work on barn yard.....	328.00
Repairs catch basins, manholes and drains.....	1,407.75
Repairs on tunnels.....	1,707.50
Repairs on sewers.....	1,396.00
Building catch basins, manholes and drains.....	118.00
Measuring high water.....	101.00
Changing Plymouth av sewer.....	617.50
Moving material from old to new warehouse.....	457.50
Insurance.....	351.00
Personal injury cases charged to old sewers.....	120.00
	<hr/> \$46,254.95



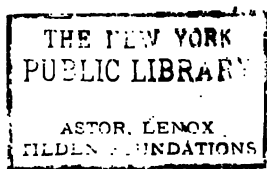


TABLE No. 17  
SUMMARY OF SEWERS BUILT IN 1914

Kind of Sewer	Size in Inches	Length in Feet
Vitrified clay pipe.....	9	1,913.5
Vitrified clay pipe.....	12	30,720.4
Vitrified clay pipe.....	15	16,726.1
Vitrified clay pipe.....	18	7,634.9
Vitrified clay pipe.....	20	5,951.4
Vitrified clay pipe.....	22	7,799.8
Vitrified clay pipe.....	24	8,829.3
Vitrified clay pipe.....	27	7,418.8
Vitrified clay pipe.....	30	4,734.9
Vitrified clay pipe.....	33	892.8
Brick, egg.....	24	24.0
Brick, egg.....	30	24.0
Brick, circular.....	42	37.7
Brick, circular.....	66	41.5
Concrete, egg, reinforced.....	36	3,019.1
Concrete, egg, reinforced.....	39	461.7
Concrete, egg, reinforced.....	45	325.2
Concrete, egg, reinforced.....	51	1,055.5
Concrete, egg, reinforced.....	60	1,990.5
Concrete, egg, reinforced.....	63	1,279.0
Concrete, circular, reinforced.....	42	4,286.9
Concrete, circular, reinforced.....	45	664.6
Concrete, circular, reinforced.....	48	2,190.5
Concrete, circular, reinforced.....	60	1,624.9
Concrete, circular, reinforced.....	66	884.5
Concrete, circular, reinforced.....	72	1,131.1
Concrete, circular, reinforced.....	90	522.2
Total feet.....		112,184.8
Total miles.....		21.245



TABLE No. 18  
SEWERS CONSTRUCTED AND ASSESSED DURING THE SEASON OF 1901

STREET	FROM	TO	Size in Inches	Kind	Shape	Length Feet	Area Sqr. Feet	Cost	Amount Assessed
Alley block 1, Kent-	24th at sly bet Russell	East and West ch							
Aldrich av N	34th av N	33th av	9	Clay pipe	3-culat	291	2,700.33	6,900.33	
Aldrich av N	34th av N	30th av	15	Clay pipe	3-culat	120	1,000.00	2,000.00	
Aldrich av N	34th av N	37th av	12	Clay pipe	3-culat	100	1,000.00		
Aldrich av N	34th av N	37th av	15	Clay pipe	3-culat	100	1,000.00		
Aldrich av N	34th av N	37th st	30	Clay pipe	3-culat	100	1,000.00		
Barton av	Madison av	4 line bet 5, 6th 11, Prospect park, 1st							
Bassett pl	6th av N	5th av	12	Clay pipe	3-culat	383	1,430.00	8,360.00	
Benson st	Oak st	Ontario st	12	Clay pipe	3-culat	600	1,200.00	1,200.00	
Bryant av N	35th av N	30th av N	12	Clay pipe	3-culat	300	1,200.00	1,200.00	
Bryant av N	30th av N	37th av N	15	Clay pipe	3-culat	200	2,000.00	3,430.00	
Bryant av N	10th av N	11st av N	18	Clay pipe	3-culat	600	2,070.11	3,870.10	
Bryant av N	11st av N	12nd av N	20	Clay pipe	3-culat	737	1,800.00	770.00	
California st	22nd av NE	23rd av NE	24	Clay pipe	3-culat	300	1,200.00	2,700.00	
Cedar Lake rd	Elm st	Hawthorn av	27	Clay pipe	3-culat	172	2,100.00	2,100.00	
Cedar Lake rd	Hawthorn av	Clayton av N	32	Clay pipe	3-culat	110	1,215.29	1,334.32	
Cedar Lake rd	Clayton av N	30th st	12	Clay pipe	3-culat	533	2,311.51	2,311.51	
Cinton av	38th st	R. R.	12	Clay pipe	3-culat	195	3,967.18		
Collins av S	28th st	Lake st	12	Clay pipe	3-culat	100			
Collins av S	29th st	Sherridan av N	33	Clay pipe	3-culat	157	90,700.32	9,710.35	
Cre. matory sewer	20th av N	Thomas av N	30	Clay pipe	3-culat	588			
Crystal Lake av	Sherridan av N	Upton av N	27	Clay pipe	3-culat	1,233	3,700.00	3,143.00	
Crystal Lake av	Upton av N	Washington av N	18	Clay pipe	3-culat	303	12,077.20	849.00	
Crystal Lake av	S. line lot 23 Sec. 6 rd	37th av N	12	Clay pipe	3-culat	092	1,192.28	1,192.28	
Dupont av N	37th av N	38th av N	15	Clay pipe	3-culat	019	1,072.11		
Dupont av N	38th av N	37th st	00	R. R.		001	2,077.20	849.00	
Dupont av S	39th st	15th st	12	Clay pipe	3-culat	308	1,192.28	1,192.28	
Elliot av	39th st	Cedar Lake rd	20	Clay pipe	3-culat	880	1,072.11		
Elm st	Latrol av	38th av	12	Clay pipe	3-culat	004	0,000.00	0,000.00	
Emerson av N	34th av	35th av	12	Clay pipe	3-culat	004			
Emerson av N	35th av	36th av	12	Clay pipe	3-culat	004			

Emerson av N	37th av	Clay pipe.	003.7	0	3	5,998.02	1,998.75
Emerson av N	37th av	Circular.	954.1	0	3	18,371.25	3,766.45
Emerson av N	41st av	Re-con.	1037.0	9	10	4,098.90	3,482.86
8th av N	Emerson av	Egg.	664.0	10	3	1,372.03	1,334.19
11th av SE	Winter st.	Egg.	1327.1	10	3	5,550.37	3,331.80
18th av S.	Division st.	Re-con.	963.1	5	3	1,550.72	1,371.50
18th av S.	38th st.	Clay pipe.	965.7	0	2	5,989.55	2,194.35
18th av S.	40th st.	Clay pipe.	590.5	4	2	6,577.14	451.50
4th av S.	38th st.	Clay pipe.	594.9	4	2	2,286.56	1,782.90
4th st N	38th av	Clay pipe.	59.6	7	4	3,135.24	2,101.05
4th st N	40th av	Clay pipe.	656.2	4	14	25,472.92	2,454.00
5th av S	39th st.	Clay pipe.	591.1	25	13	15,971.46	8,185.65
5th st NE	17th av NE	Clay pipe.	387.8	30	15	17,757.12	10,410.60
5th st NE	R. R.	Clay pipe.	410.4	23	15	19,134.74	8,174.70
14th av N	5th st.	Re-con.	325.2	4	15	2,050.22	1,555.50
14th av N	6th st.	Egg.	24.0	9	15	13,777.10	4,166.70
14th av N	6th st.	Egg.	24.0	8	15	2,296.14	1,104.73
40th av S.	33rd st.	Re-con.	327.0	2	15	2,244.41	386.05
44th av S.	29th st.	Clay pipe.	691.3	2	15	2,637.99	1,939.50
47th av S.	Lake st.	Clay pipe.	254.4	7	16	11,169.86	8,748.00
Garfield av.	Bryant av	Clay pipe.	586.1	25	16	16,705.40	8,748.00
Garfield av.	36th st.	Re-con.	1131.1	30	16	16,705.40	8,748.00
Garfield av.	38th st.	Clay pipe.	609.9	30	16	16,705.40	8,748.00
Garfield av.	38th st.	Clay pipe.	1301.2	30	16	16,705.40	8,748.00
Grand av.	34th st.	Clay pipe.	661.0	30	16	16,705.40	8,748.00
Grand av.	35th st.	Clay pipe.	654.0	30	16	16,705.40	8,748.00
Grand av.	36th st.	Clay pipe.	1303.0	30	16	16,705.40	8,748.00
Grand av.	37th st.	Clay pipe.	660.0	30	16	16,705.40	8,748.00
Grand av.	38th st.	Clay pipe.	664.1	30	16	16,705.40	8,748.00
Harriet av.	35th st.	Clay pipe.	611.7	30	16	16,705.40	8,748.00
Harriet av.	36th st.	Clay pipe.	1301.9	30	16	16,705.40	8,748.00
Harriet av.	38th st.	Clay pipe.	1319.9	30	16	16,705.40	8,748.00
Hiya s ha av.	40th st.	Clay pipe.	576.2	30	16	16,705.40	8,748.00
Hiya s ha av.	22nd av NE	Clay pipe.	134.1	30	16	16,705.40	8,748.00
Hiawatha av.	Nokomis av.	Re-con.	1564.3	30	16	16,705.40	8,748.00
Humboldt av S.	32nd st S	Egg.	1106.1	30	16	16,705.40	8,748.00
James av N	Lagoon av.	Clay pipe.	293.4	30	16	16,705.40	8,748.00
James av S	Crusell's 3rd add.	Clay pipe.	214.6	30	16	16,705.40	8,748.00
Jewett pl	Th Mall	Clay pipe.	1031.0	30	16	16,705.40	8,748.00
Knox av N	8th av N	Re-con.	1035.5	30	16	16,705.40	8,748.00
Knox av N	30th av	Egg.	658.4	30	16	16,705.40	8,748.00
Knox av N	32nd av	Clay pipe.	661.6	30	16	16,705.40	8,748.00
Knox av N	33rd av	Clay pipe.	661.6	30	16	16,705.40	8,748.00

TABLE No. 18—Continued  
SEWERS CONSTRUCTED AND ASSESSED DURING THE SEASON OF 1914

STREET	FROM	TO	Size in Inches	Kind	Shape	Length in Feet	No. of Man- holes	No. of Catch- basins	Cost	Amount of Assess- ment
Lagoon av.	Irving av S.	Humboldt av S.	18	Clay pipe.	Circular.	319.5	6		2,840.70	1,759.95
Lagoon av.	Irving av S.	Jones av S.	15	Clay pipe.	Circular.	322.1				
Lagoon av.	Jones av S.	Alley bet. Jas. & Knox.	12	Clay pipe.	Circular.	182.5				
Laurel av.	Elm st.	Alley bet. Jas. & Knox.	12	Clay pipe.	Circular.	514.3	9	6	3,895.80	2,744.10
Laurel av.	Elm st.	Alley bet. Jas. & Knox.	15	Clay pipe.	Circular.	600.1				
Laurel av.	Spring st.	Alley bet. Jas. & Knox.	12	Clay pipe.	Circular.	514.3				
Lincoln st.	Spring st.	Broadway st.	42	Brick.	Circular.	37.7				
Lincoln st.	Broadway st.	Broadway st.	1278.8	Re-con.	Circular.	1278.8	16	13	21,815.56	6,206.10
Lincoln st.	Broadway st.	Broadway st.	24	Clay pipe.	Circular.	671.0				
Lincoln st.	13th av NE.	13th av NE.	22	Clay pipe.	Circular.	637.7				
Lincoln st.	14th av NE.	14th av NE.	12	Clay pipe.	Circular.	653.8				
Lincoln st.	26th av NE.	27th av NE.	12	Clay pipe.	Circular.	675.9	12	5	8,210.33	4,504.80
Lincoln st.	27th av NE.	28th av NE.	12	Clay pipe.	Circular.	653.7				
Lincoln st.	28th av NE.	29th av NE.	15	Clay pipe.	Circular.	410.9				
Lowry av NE.	Grand st.	Grand st.	15	Clay pipe.	Circular.	551.2	11	4	3,567.34	2,499.90
Lowry av NE.	Grand st.	Main st.	12	Clay pipe.	Circular.	313.2				
Lowry av NE.	24th st NE.	Main st.	12	Clay pipe.	Circular.	276.6	4		1,180.89	1,133.70
Lowry av NE.	4th st.	University av.	12	Clay pipe.	Circular.	269.2				
Lowry av NE.	4th st.	5th st.	12	Clay pipe.	Circular.	610.9				
Lyndale av S.	35th st.	36th st.	15	Clay pipe.	Circular.	1301.8	25	12	15,584.75	8,619.75
Lyndale av S.	35th st.	36th st.	22	Clay pipe.	Circular.	660.4				
Lyndale av S.	38th st.	39th st.	20	Clay pipe.	Circular.	663.2				
Lyndale av S.	39th st.	40th st.	20	Clay pipe.	Circular.	633.4	3		9,105.47	2,554.80
Lyndale pl.	8th av N.	11th av N.	51	Re-con.	Circular.	686.3				
Marshall st.	30th av NE.	31st av NE.	27	Clay pipe.	Circular.	653.4				
Marshall st.	31st av NE.	32nd av NE.	24	Clay pipe.	Circular.	1442.1				
Marshall st.	33rd av NE.	34th av NE.	22	Clay pipe.	Circular.	1657.9	36		25,862.25	14,037.45
Marshall st.	35th av NE.	36th av NE.	20	Clay pipe.	Circular.	631.2				
Marshall st.	36th av NE.	37th av NE.	18	Clay pipe.	Circular.	627.2				
Minnehaha av.	38th st.	40th st.	36	Re-con.	Egg.	1454.8				
Minnehaha av.	38th st.	40th st.	30	Clay pipe.	Circular.	735.7				
Minnehaha av.	40th st.	41st st.	33	Clay pipe.	Circular.	733.4				
Minnehaha av.	42nd st.	43rd st.	27	Clay pipe.	Circular.	705.5	40	28	39,521.36	14,235.60
Minnehaha av.	43rd st.	44th st.	24	Clay pipe.	Circular.	703.0				
Minnehaha av.	44th st.	45th st.	22	Clay pipe.	Circular.	703.8				
Minnehaha av.	45th st.	46th st.	15	Clay pipe.	Circular.	702.9				
19th av NE.	5th st.	6th st.	12	Clay pipe.	Circular.	325.4	3		1,888.74	793.35

16th av NE	Johnson st.	Hayes st.	12	Clay pipe.	672.01	6	0	4,960.93	1,180.05
17th st.	27th st.	28th st.	15	Clay pipe.	653.7	9	4	3,210.33	2,921.10
Oakland av.	28th st.	29th st.	12	Clay pipe.	519.1	9	3	3,773.11	2,838.00
Olive av N	17th av.	18th av.	15	Clay pipe.	404.6	9	3	3,773.11	2,838.00
Olive av N	16th av.	17th av.	12	Clay pipe.	336.5	9	3	3,773.11	2,838.00
Olive av N	18th av.	19th av.	12	Clay pipe.	638.4	9	3	3,773.11	2,838.00
Park av.	38th st.	39th st.	66	Clay pipe.	658.1	4	0	4,907.02	1,633.05
Pearce st.	18th av NE	19th av NE	22	Clay pipe.	659.5	4	0	4,907.02	1,633.05
Pillsbury av	34th st.	35th st.	12	Clay pipe.	652.8	30	19	18,995.38	10,254.30
Pillsbury av	35th st.	36th st.	15	Clay pipe.	637.4	30	19	18,995.38	10,254.30
Pillsbury av	36th st.	37th st.	24	Clay pipe.	656.6	30	19	18,995.38	10,254.30
Pillsbury av	37th st.	38th st.	22	Clay pipe.	663.9	30	19	18,995.38	10,254.30
Pillsbury av	38th st.	39th st.	20	Clay pipe.	661.9	30	19	18,995.38	10,254.30
Pillsbury av	39th st.	40th st.	18	Clay pipe.	445.3	23	13	14,217.68	8,087.25
Pleasant av	35th st.	36th st.	15	Clay pipe.	637.9	23	13	14,217.68	8,087.25
Pleasant av	36th st.	37th st.	27	Clay pipe.	663.6	23	13	14,217.68	8,087.25
Pleasant av	37th st.	38th st.	24	Clay pipe.	656.4	23	13	14,217.68	8,087.25
Pleasant av	38th st.	39th st.	22	Clay pipe.	657.4	23	13	14,217.68	8,087.25
Pleasant av	39th st.	40th st.	20	Clay pipe.	649.1	23	13	14,217.68	8,087.25
Polk st.	Spring st.	Summer st.	15	Clay pipe.	317.4	6	3	3,025.11	1,473.75
Powderhorn ter.	12th av S.	13th av S.	9	Clay pipe.	260.4	6	3	3,025.11	1,473.75
Powderhorn ter.	13th av S.	14th av S.	15	Clay pipe.	317.4	6	3	3,025.11	1,473.75
Spring st.	Lincoln st.	2nd st.	42	Re-con.	312.0	2	4	3,128.99	727.05
2nd av SE	Prince st.	2nd st.	18	Clay pipe.	213.6	2	4	3,128.99	727.05
2nd st SE	2nd av SE	3rd av SE	12	Clay pipe.	210.0	1	1	906.61	396.00
6th st S	Bjornson (23rd av.)	Pierce st.	22	Clay pipe.	305.7	2	2	1,028.84	708.90
16th av NE	Filmore st.	5th st.	22	Clay pipe.	340.1	3	3	2,338.60	661.45
16th av S	4th st.	5th st.	12	Clay pipe.	351.0	3	3	932.39	641.70
3rd av S	38th st.	39th st.	12	Clay pipe.	590.2	5	5	1,340.69	1,356.03
3rd st N	31st av.	32nd av.	12	Clay pipe.	453.2	4	3	1,496.68	1,044.19
10th av S	41st st.	Western av.	12	Clay pipe.	652.3	5	2	2,212.49	1,664.40
10th st N	Holden st.	University av.	20	Clay pipe.	379.8	3	3	2,072.00	675.00
12th av NE	3rd st.	Powderhorn ter.	12	Clay pipe.	388.5	3	2	3,039.19	792.00
13th av S	38th st.	39th st.	15	Clay pipe.	48.1	2	2	825.01	616.08
13th av S	39th st.	40th st.	12	Clay pipe.	657.3	10	6	5,286.76	2,676.30
13th av SE	4th st.	5th st.	12	Clay pipe.	656.7	10	6	5,286.76	2,676.30
20th av S	3rd st.	4th st.	12	Clay pipe.	205.8	1	1	882.65	354.75
20th av SE	Como av.	Talmage av.	12	Clay pipe.	353.2	3	3	789.68	465.66
21st st E	Elliot av.	10th av S.	12	Clay pipe.	611.6	5	3	1,397.85	1,317.09
22nd av NE	River	Marshall st.	66	Brick	204.8	2	2	887.58	561.00
22nd st E	W. line lot 15, blk. 1.	Jackson's add.	12	Re-con.	41.5	2	2	5,780.04	257.30
				Clay pipe.	196.0	2	2	482.28	257.30

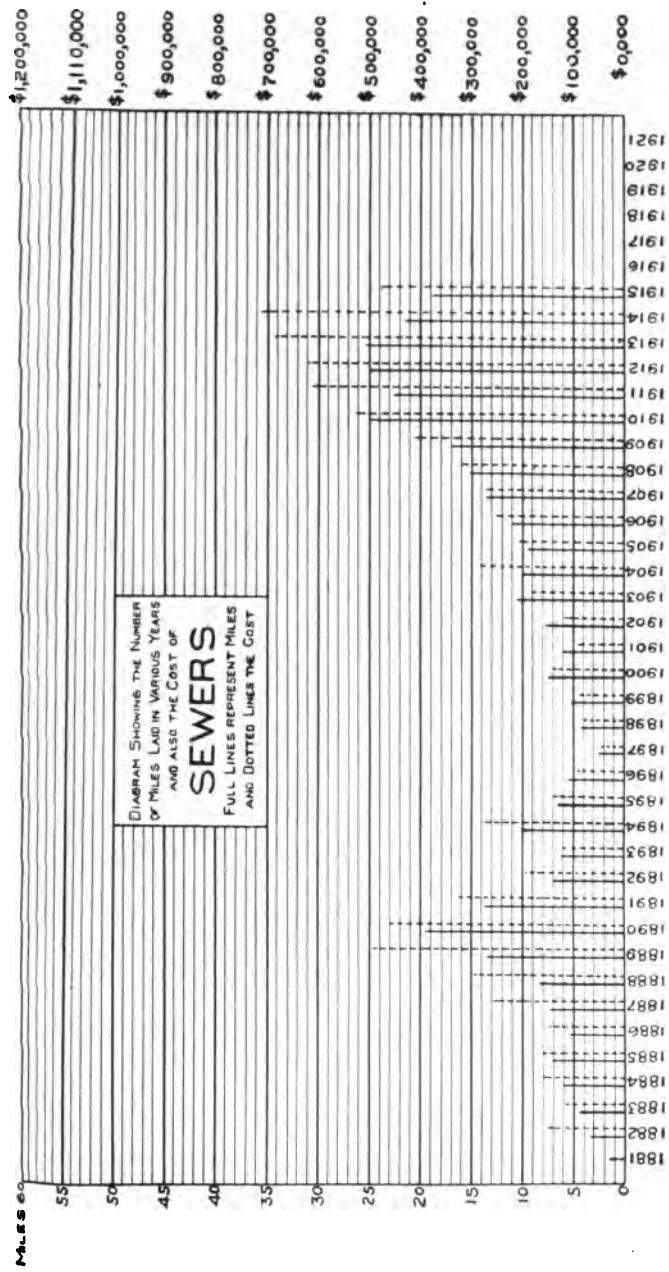


TABLE No. 18—Continued  
FINANCIAL SUMMARY FOR 1914

Assessed sewers, including 150 estimated catch basins to be built in 1915.....		\$655,708.18
Non-assessed sewers, shafts and drains.....		7,428.76
Changing catch basins, man-holes and drains.....		16,832.03
Cost of 202 catch basins left over from 1913 and before.....		12,809.24
Cost of 4½ acres land for new sewer yard at 1911 E. 26th st.....		12,436.60
Cost of new catch basins and man-holes, sewer yard at 1911 E. 26th st.....		24,497.52
General inspection for sidewalk department.....		355.02
Warehouse and yard inventory, January 1st, 1915.....	\$65,288.50	
General account.....	6,259.72	
	<u>\$71,548.22</u>	
Warehouse yard inventory January 1, 1914.....	\$67,937.73	
General account.....	4,249.64	
	<u>71,487.37</u>	60.85
		<u>\$726,761.60</u>
Less estimated cost of 150 catch basins to be built in 1915.....	\$7,155.00	
Less 29th st sewer paid for by C. M. & St. P. R. R.....	2,207.20	
Less drain at 44th st and Beard av S, paid for by Geo. S. Grimes and 13th ward.....	426.18	
		<u>\$9,788.38</u>
Total expense, 1914.....		<u>\$716,973.22</u>

**TABLE No. 19**  
**SEWER CONNECTIONS AND MILEAGE OF SEWERS BUILT BY WARDS**

Record of Sewer Connections made prior to January 1st, 1915, in the Different Wards				Miles of Sewer Built				Total Number of Connection made per Mile of Sewer
Wards	Made Prior to 1914	Made In 1914	Total	Prior to Jan. 1, 1914	In 1914	Total Sewers	Sewer Tunnels	
First.....	1,017	93	1,110	12,789	1,770	14,559	2,619	76.2
Second.....	2,155	137	2,292	28,482	1,007	29,489	0,561	77.7
Third.....	4,402	291	4,783	49,534	0,976	50,510	0,142	94.7
Fourth.....	3,333	91	3,424	37,628	0,680	38,308	0,539	89.4
Fifth.....	2,699	56	2,756	23,375	0,114	23,489	1,232	117.0
Sixth.....	933	41	973	10,070	0,250	10,320	0,398	94.4
Seventh.....	2,720	413	3,133	29,323	0,825	30,148	.....	104.0
Eighth.....	5,016	291	6,207	50,513	1,041	51,554	.....	123.0
Ninth.....	2,411	215	2,626	30,175	1,836	32,011	0,352	82.0
Tenth.....	1,724	278	2,002	25,360	4,479	29,839	.....	67.2
Eleventh.....	2,041	138	2,179	18,252	0,100	18,352	0,042	113.0
Twelfth.....	1,215	304	1,519	23,560	2,387	25,947	0,205	58.4
Thirteenth.....	538	470	1,008	9,613	5,780	15,393	.....	65.4
<b>Totals..</b>	<b>31,194</b>	<b>2,818</b>	<b>34,012</b>	<b>348,674</b>	<b>21,245</b>	<b>369,919</b>	<b>6,090</b>	<b>92.0</b>







**TABLE No. 20**  
**OLD SEWER INVENTORY, JANUARY 1, 1915**  
 In yards and warehouse at 1911 E 26th st

Tools, steamers, etc.....	\$4,677.60
Office fixtures.....	90.50
Wagons, sleds, harness, etc.....	564.60
Hay and feed.....	172.13
Horses.....	2,000.00
Lumber.....	169.93
Castings.....	3,069.79
Cement.....	49.50
Step irons.....	3.00
Oils.....	44.55
Sewer pipe.....	306.47
Automobile trucks.....	4,333.00
Hose fire.....	980.00
<b>Total.....</b>	<b>\$16,461.07</b>

TABLE No. 20—Continued

## INVENTORY OF TOOLS, MACHINERY, MATERIAL, ETC., JANUARY 1, 1915

In sewer department warehouse and yards at 1621 Monroe st NE

Lumber, centers, extra bottoms, laggan, etc.....	\$8,271.36
Tools, office fixtures and supplies, testing apparatus and blacksmith shop with machinery .....	11,933.06
Machinery, engine boilers and fittings—	
1-K 6 h. p. Smith concrete mixer .....	Gasolene
1-R 20 h. p. stone crusher .....	Steam
1 18 h. p. Nagel Engine .....	"
3 18 h. p. North Star engines .....	"
1 4 h. p. gasolene engine .....	Gasolene
1 36-foot pump frame and shafting .....	
1 Pile driver, hand power .....	
2 Concrete tables on wheels .....	
3 Turn tables, 1 track switch .....	
4 Rotary pumps .....	
1 Ramsey steam pump "old" .....	
Light and heavy car rail .....	
13 Diaphragm pumps .....	
15 Electric batteries .....	
8 Dump cars, wood frame .....	\$6,583.59
1 Dump car, all iron .....	
250 feet steam hose, "new" .....	
160 feet suction hose, "new" .....	
1 Hose cart hand made .....	
100 feet hose for same .....	
2 Dump cars "tunnel" .....	
54 Dump car Wheels and axles .....	
1 Derrick "hoisting" .....	
Drill bits and fittings .....	
2 Steam drills "fair" .....	
2 Steam drills "poor" .....	
18 Machine buckets "S" .....	
10 Machine buckets "M" .....	
19 Machine buckets "L" .....	
27 Axles for D. C. wheels .....	
Miscellaneous machinery, tools, concrete forms, lumber, etc., on work at 39th st and Dupont av S .....	2,235.75
Light car, rail and tunnel car, on work in Nicollet av tunnel .....	98.73
General account, sewer pipe, brick and cement .....	2,366.58
Running machinery in main building—	
1 7 h. p., 2 2 h. p., 1 1½ h. p. Morris electric motors; 1 American planer; 1 circular saw; a band saw; 1 drill press; 1 Jenson emery wheel; 1 Bates cutting machine; hand power elevator; leather and rubber belting; pulleys; shafting; trip hammer, etc .....	862.34
Total .....	\$32,357.41

TABLE No. 20—Continued

## INVENTORY OF TOOLS, MACHINERY, MATERIALS, ETC., JANUARY 1, 1915

In Sewer Department warehouse and yards at 1911 E 26th st

Lumber, centers, extra bottoms, laggan, etc.	\$9,418.97
Tools in warehouse	581.52
Miscellaneous machinery, tools and repair stock in carpenter shop.	736.81
Machinery, engine boilers and fittings	
Mark	
1-A 16 h. p. single boom machine.	Steam
1-B 16 h. p. double boom machine.	"
1-C 22 h. p. double boom machine.	"
1-D 20 h. p. centrifugal pump.	"
1-F 16 h. p. double boom machine.	"
1-G 16 h. p. double boom machine.	"
1-H 20 h. p. Smith concrete mixer.	"
1-I 16 h. p. centrifugal pump.	"
1-J 20 h. p. double boom machine.	"
1-L 6 h. p. Waterloo concrete mixer.	Gasolene
1-M 12 h. p. double boom machine.	"
1-N 6 h. p. double boom machine.	"
1-O 8 h. p. double boom machine.	"
1-S 16 h. p. double boom machine.	Steam
1-V 4½ h. p. Wonder concrete mixer.	Gasolene
1-E 20 h. p. Cube concrete mixer, steam, on work at Dupont av S and 39th st.	
1-P 16 h. p. boiler, steam, on work at Bassett's creek.	
1-Q 16 h. p. boiler, steam, on work at Bassett's creek.	
1-V 20 h. p. Milwaukee concrete mixer, steam, on work at Bassett's creek.	
1 25 h. p. American steam boiler.	
1-VP 3½ h. p. Fuller & Johnson mud pump.	
1-VP 3½ h. p. Parker's contractor pump, on work at sea wall.	
1-TP 3½ h. p. Parker's contractor pump, on work at sea wall.	
1-WP 3½ h. p. Parker's contractor pump, on work at sea wall.	
1-XP 3½ h. p. Parker's contractor pump, on work at Bassett's creek.	
1-YP 3½ h. p. Parker's contractor pump, on work at Bassett's creek.	
1-ZP 3½ h. p. Parker's contractor pump, on work at Bassett's creek.	
2 36-foot pump, frames and shafting.	
6 Centrifugal pumps.	
36 feet 8-inch wrought iron pipe for Pumps.	
8 Dump cars, iron frame.	
12 Dump cars, wood frames.	
Car and rail fittings.	
1 Brick conveyor.	
4 Machine buckets "S."	
10 Machine buckets "M."	
16 Machine buckets "L."	
Steam drill fittings.	24,425.64
Automobiles:	
2 Velie 3-ton trucks and 1 Velie touring car.	7,803.00
General account, sewer pipe, brick and cement.	3,893.14
Total.	\$46,856.08
Grand total.	\$79,213.47

TABLE No. 21  
SUMMARY OF CEMENT TESTED AND USED DURING THE SEASON OF 1914

BRAND OF CEMENT	LOCATION OF MILLS	Number Barrels Inspected	Tensile Strain Per Square Inch						Per Cent of Fineness		Time of Setting			Per Cent of Water Used		Cement Rejected		
			Neat			1 Cement, 3 Sand, by Weight			50 Mesh	100 Mesh	Hrs.	Min.	Hrs.	Min.	Neat	1 & 3	No. of Bbls.	Per Cent.
			7 Days	30 Days	7 Days	30 Days	7 Days	30 Days										
N. W. State.	Mason City, Ia.	71,850	646	682	300	403	99.80	95.80	3	10	6	30	22	9	200	.002		
Lehigh.	Mason City, Ia.	60,400	664	725.5	304	403	99.85	95.50	3	21	6	25	22	9	800	1.3		
Atlas.	Hannibal, Mo.	16,530	627	741	221.5	347.5	99.72	94.89	2	54	6	22	22	9	800	3.6		
Medusa.	Dixon, Ill.	4,200	648	797	234	392	99.77	95.65	3	21	6	23	22	9	1,000	23.8		
Universal.	Chicago, Ill.	2,700	565	689	275	402	99.84	95.60	2	54	6	22	22	9				
Red Ring.	St. Louis, Mo.	400	723	710.5	272	400	99.70	94	3	20	6	20	22	9				
Chicago-A-A.	Ogelsby, Ill.	200	736	819	281	388	99.80	94	3	50	6	30	22	9				
Total.		156,080													2,600	1.6		

## Requirements:

Portland Cements: 24 hours in moist chamber until broken;— Neat, 500 lbs.; 1 and 3, 200 lbs. in 7 days.

Also subject to cold water pats and steam tests in addition to above requirements.



**TABLE No. 22**  
**WORK DONE BY THE INSPECTION DEPARTMENT**

Wards	Sewer Connections			Water Connections			Inspections Made in 1914	
	Made Prior to 1914	Made In 1914	Total	Made Prior to 1914	Made In 1914	Total	Kind	Number
First.....	1,017	93	1,110	2,349	120	2,469	Sewer...	2,818
Second.....	2,155	137	2,292	3,638	123	3,761	Water...	3,007
Third.....	4,492	291	4,783	6,889	309	7,198	Repair...	1,170
Fourth.....	3,333	91	3,424	5,130	162	5,292	Exten's...	364
Fifth.....	2,700	56	2,756	5,402	57	5,459	Gas.....	371
Sixth.....	932	41	973	2,319	37	2,356		
Seventh.....	2,720	413	3,133	3,821	348	4,169		
Eighth.....	5,916	291	6,207	7,230	217	7,447		
Ninth.....	2,411	215	2,626	3,952	186	4,138		
Tenth.....	1,724	278	2,002	2,787	277	3,064		
Eleventh.....	2,041	138	2,179	2,754	118	2,872		
Twelfth.....	1,215	304	1,519	2,799	505	3,304		
Thirteenth...	538	470	1,008	4,673	550	5,225		
<b>Total...</b>	<b>31,194</b>	<b>2,818</b>	<b>34,012</b>	<b>53,745</b>	<b>3,009</b>	<b>56,754</b>		<b>7,732</b>

Inspector's payroll.....							\$16,134.08
Paid to city for inspection.....							9,316.25
Paid to city for repaving.....				Sq. Yds.	Cost		
Wood paving.....				1,254	\$3,044.49		
Stone paving.....				1,918	2,702.17		
Brick paving.....				372	676.49		
Asphalt paving.....				627	1,602.94		
				4,201	\$8,026.09		
Cost to city for repaving.....					\$8,026.09		
Cost to city for inspection.....							\$6,817.83
Cost per inspection.....							2.09
Net cost to city per inspection.....							.88

TABLE No. 38

## SIDEWALK LAID DURING THE SEASON OF 1914

The cost of sidewalk is assessed to abutting property. Property owners are allowed to lay their own sidewalks subject to the inspection of this department. Stone walks laid by city are laid by contract.

STREET	FROM	TO	SIDE	Width in feet	LENGTH		
					Artificial Stone Laid by Owner Lateral Feet	Artificial Stone Laid by City Lateral Feet	Total Feet
1st ward—							
California st.	16th av NE.	31st av NE.	Both	0		06	06
4th st NE.	13th av NE.	Lowry av.	Both	0		187	187
5th st NE.	13th av NE.	23rd av NE.	West	0		110	110
15th av NE.	Main st.	2nd st.	Both	0	128	10	138
Lowry av NE.	Marshall st.	5th st.	Both	0		40	40
Marshall st.	22nd av NE.	23rd av NE.	West	0		10	10
16th av NE.	Main st.	University av.	Both	0		54	54
17th av NE.	18th av NE.	20th av NE.	Both	0		54	54
3rd st NE.	3rd st.	5th st.	Both	0		84	84
13th av NE.	Marshall st.	5th st.	Both	0		124	124
20th av NE.	3rd st.	University av.	North	0		14	14
22nd av NE.	2nd st.	University av.	Both	0		24	24
23rd av NE.	4th st.	5th st.	Both	0		30	30
24th av NE.	3rd st.	5th st.	Both	0	298	30	328
26th av NE.	Grand st.	California st.	North	0	211	6	217
27th av NE.	Marshall st.	Grand st.	South	0	172	4	176
University av NE.	Central av.	Lowry av.	Both	0	88	708	796
Total.					1,097	2,577	3,674
Walk.					\$526.50	\$1,140.00	\$1,666.50
Cost - Inspection.					23.92	51.48	75.40
Total.					\$550.42	\$1,191.48	\$1,741.90

CITY OF MINNEAPOLIS



TABLE No. 22—Continued  
SIDEWALK LAID DURING THE SEASON OF 1914

STREET	FROM	TO	SIDE	Width in Feet	LENGTH		
					Artificial Stone Laid by Owner Lineal Feet	Artificial Stone Laid by City Lineal Feet	Total Feet
2nd ward—							
Arthur av.	Sidney pl.	Williams av.	Both.	6	300	427	727
Chandler st.	Hamline av.	Seymour st.	West.	6	37		37
Como av SE.	17th av SE.	26th av SE.	South.	6	40	69	109
Dartmouth st.	River rd.	27th av SE.	Both.	6		51	51
Erie st.	Washington av SE.	River rd.	Both.	6		110	110
Essex st.	Harvard st.	Walnut st.	Both.	6		41	41
8th av SE.	7th st.	8th st.	West.	6	100		100
18th av SE.	Elm st.	Brook st.	East.	6	120		120
44th st SE.	8th av.	15th av.	Both.	6	90	56	146
5th av SE.	6th st.	7th st.	West.	6	18		18
Hamline av.	Warwick st.	Boulevard.	Both.	6	1,125	589	1,714
Malcolm av.	Barton av.	Melbourne av.	Both.	6	110	2	112
19th av SE.	Elm st.	Como av.	East.	6	40	753	793
Orlin av.	Arthur av.	Malcolm av.	South.	6		52	52
Seymour av.	Arthur av.	Hamline av.	Both.	6	232	481	713
Sidney pl.	Arthur av.	Malcolm av.	South.	6		118	118
7th st SE.	18th av.	Malcolm av.	North.	6		134	134
117th av SE.	Como av.	Oak st.	East.	6		111	111
110th av SE.	Como av.	Talmadge av.	East.	6	508	13	611
12th av SE.	Como av.	Division st.	West.	6	42	14	56
22nd av SE.	University av.	5th st.	Both.	6		80	80
24th av SE.	Como av.	Fairmount st.	Both.	6		46	46
227th av SE.	Washington av SE.	University av.	West.	6	104	267	371
University av SE.	University av.	River rd.	Both.	6	132	8	140
Walnut st.	5th av.	6th av.	North.	6	41		41
Warwick st.	Washington av SE.	Beacon st.	Both.	6	222	140	362
	Hamline av.	Sharon av.	Both.	6			
Total.					3,310	3,503	6,813
Cost {	Walk.				\$1,588.80	\$1,681.44	\$3,270.24
	Inspection.				72.19	76.40	148.59
Total {	Total.				\$1,660.99	\$1,757.84	\$3,418.83

## CITY OF MINNEAPOLIS

[illegible]

TABLE No. 22—Continued  
SIDEWALK LAID DURING THE SEASON OF 1914

STREET	FROM	TO	SIDE	Width in Feet	LENGTH		
					Artificial Stone Laid by Owner Lineal Feet	Artificial Stone Laid by City Lineal Feet	Total Feet
4th ward—							
Aldrich av N.....	5th av N.....	6th av N.....	West.....	6	95	.....	95
Bryant av N.....	Western av.....	6th av N.....	Both.....	6	32	35	67
Cedar Lake rd.....	2nd av N.....	Sheridan av.....	Both.....	6	361	626	987
Colfax av N.....	Western av.....	2nd av N.....	East.....	8	112	.....	112
Franklin av.....	Mary pl.....	Chestnut av.....	Both.....	14-8-6	42	163	205
1st st N.....	Pillsbury av.....	Pleasant av.....	North.....	12	.....	58	58
1st st N.....	Hennepin av.....	1st av N.....	South.....	13	.....	67	67
4th av N.....	Dupont av.....	Newton av.....	Both.....	6	110	420	530
4th av N.....	Morgan av.....	Newton av.....	North.....	6	.....	9	9
5th av N.....	Lyndale av.....	Oliver av.....	Both.....	6	57	202	202
5th st N.....	Nicollet av.....	3rd av N.....	North.....	6	50	21	74
14th st.....	Marquette av.....	Spruce pl.....	Both.....	6	.....	5	55
Girard av N.....	Western av.....	2nd av N.....	West.....	6	36	38	74
Hawthorn av.....	13th st.....	Superior av.....	West.....	6	29	27	27
Hennepin av.....	17th st.....	Franklin av.....	West.....	6	190	.....	190
Humboldt av.....	Lincoln av.....	Franklin av.....	West.....	6	187	22	209
Irving av N.....	4th av N.....	5th av N.....	Both.....	6	87	44	131
James av N.....	Western av.....	6th av N.....	Both.....	6	16	29	45
Laurel av.....	16th st.....	Cedar Lake rd.....	Both.....	6	187	85	272
Lyndale av.....	Linden av.....	6th av N.....	Both.....	6	161	33	194
Marquette av.....	2nd st.....	10th st.....	West.....	14-6	.....	814	1,129
Nicollet av.....	4th st.....	Grant st.....	Both.....	6	315	80	200
9th st.....	Marquette av.....	1st av N.....	Both.....	14-9-6	120	167	167
Oliver av N.....	Hawthorn av.....	Chestnut av.....	West.....	6	.....	188	358
Penn av N.....	Hawthorn av.....	Cedar Lake rd.....	East.....	6	170	107	171
2nd av N.....	1st st.....	James av.....	Both.....	14-6	153	18	171
6th av N.....	Lyndale av.....	Sheridan av.....	South.....	6	30	15	45
16th st.....	Laurel av.....	Hawthorn av.....	East.....	6	63	.....	63
10th st.....	Nicollet av.....	Mary pl.....	North.....	6	.....	31	31
12th st.....	Marquette av.....	Chestnut av.....	South.....	6	126	.....	126
13th st.....	Nicollet av.....	Vine pl.....	South.....	6	49	.....	49
Western av.....	Lyndale av.....	Morgan av.....	South.....	6	.....	.....	.....

## CITY OF MINNEAPOLIS

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Total.....						2,778	3,248	6,026
Cost {	Walk.....					\$1,333.44	\$1,559.04	\$2,892.48
	Inspection.....					60.58	70.84	131.42
	Total.....					\$1,394.02	\$1,629.88	\$3,023.90
<b>5th ward—</b>								
Clinton av.....	19th st.....	Franklin av.....	Both.....	6	38			
Elliot av.....	15th st.....	16th st.....	East.....	6	25			
8th av S.....	Washington av.....	9th st.....	Both.....	6-8	221			25
11th st.....	2nd av S.....	4th av S.....	South.....	8-9	59			243
1st av S.....	16th st.....	24th st.....	Both.....	6	20			74
4th av S.....	Washington av.....	22nd st.....	Both.....	6	228			32
4th st S.....	6th av S.....	7th av S.....	North.....	15	188			277
5th av S.....	5th st.....	9th st.....	Both.....	8				188
5th st S.....	Marquette av.....	9th av S.....	Both.....	6-8	88			40
9th av S.....	5th st.....	9th st.....	Both.....	18	87			135
19th st.....	Elliot av.....	Chicago av.....	North.....	6				87
9th av S.....	Marquette av.....	14th st.....	Both.....	6	27			8
6th av S.....	Washington av.....	8th av S.....	Both.....	6-14				43
6th st.....	4th av S.....	24th st.....	Both.....	6-12	312			188
3rd av S.....	Washington av.....	8th av S.....	Both.....	6-8	93			323
3rd st S.....	3rd av S.....	8th st S.....	Both.....	6	48			120
12th st S.....	Clinton av.....	3rd av S.....	North.....	8	61			48
22nd st.....	1st av S.....	10th av S.....	Both.....	6	61			61
Washington av S.....	Park av.....	10th av S.....	North.....	6-8	80			80
	Marquette av.....	5th av S.....	South.....	18	267			143
Total.....					1,817	1,008	2,825	672
Cost {	Walk.....				\$372.16	\$483.84	\$1,356.00	
	Inspection.....				39.62	21.98	61.60	
	Total.....				\$911.78	\$505.82	\$1,417.60	

TABLE No. 22—Continued  
SIDEWALK LAID DURING THE SEASON OF 1914

STREET	FROM	TO	SIDE	Width in Feet	LENGTH		
					Artificial Stone Laid by Owner Lineal Feet	Artificial Stone Laid by City Lineal Feet	Total Feet
6th ward—							
6th st S.	15th av S.	16th av S.	South.	8-15	23	23	46
17th av S.	6th st.	7th st.	East.	8	62	6	68
3rd st.	Cedar av.	19th av S.	North.	6	265	32	297
13th av S.	2nd st.	Washington av.	West.	8			205
Total.					350	61	411
Cost { Walk Inspection. Total					\$168.00	\$29.28	\$197.28
					7.63	1.33	8.96
					\$175.63	\$30.61	\$206.24
7th ward—							
Bloomington av.	27th st.	40th st.	Both.	6	138	206	344
Cedar av.	24th st.	42nd st.	Both.	6	730	2,977	3,707
Chicago av.	24th st.	44th st.	East.	6	609	179	788
Elliot av.	39th st.	42nd st.	Both.	6	1,270	28	1,298
11th av S.	24th st.	40th st.	Both.	6	610	5,002	5,612
18th av S.	36th st.	40th st.	Both.	6	1,235	361	1,596
14th av S.	26th st.	40th st.	Both.	6	1,725	995	2,720
15th av S.	32nd st.	38th st.	Both.	6	296	1,860	2,156
40th st.	10th av S.	11th av S.	South.	6	127	127	254
Hiawatha av.	24th st.	25th st.	West.	6	30	30	60
16th av S.	24th st.	38th st.	Both.	6	1,233	222	1,455
17th av S.	24th st.	38th st.	Both.	6	154	14	168
10th av S.	26th st.	41st st.	Both.	6	388	94	482
12th av S.	28th st.	37th st.	Both.	6	139	2	141
13th av S.	30th st.	40th st.	Both.	6	820	406	1,226
20th av S.	31st st.	36th st.	Both.	6	150	150	300
24th st.	10th av S.	15th av S.	South.	6		27	27

25th st.	Elliot av.	Cedar av.	Both.	6	44	80	124
27th st.	Elliot av.	Cedar av.	Both.	6	125	109	234
28th st.	Elliot av.	Cedar av.	Both.	6	22	167	189
33rd st.	Elliot av.	Cedar av.	Both.	6	128	20	198
35th st.	11th av S.	21st av S.	Both.	6	251	76	178
36th st.	12th av S.	17th av S.	Both.	6	223	223	478
37th st.	Chicago av.	18th av S.	Both.	6	887	52	939
38th st.	Chicago av.	21st av S.	Both.	6	1,370	2,681	4,051
39th st.	Chicago av.	14th av S.	Both.	6	122	285	407
Total.					12,462	16,304	28,766
Cost { Walk.					\$5,981.76	\$7,825.92	\$13,807.68
Cost { Inspection.					261.79	355.59	627.38
Cost { Total.					\$6,243.55	\$8,181.51	\$14,435.06
8th ward—							
Blaisdell av.	Elroy st.	31st st.	East.	6	42	22	22
Bryant av S.	22nd st.	33rd st.	Both.	8	32	17	42
Chicago av.	27th st.	34th st.	West.	6	81	66	49
Chowen av S.	St. Paul av.	Lake st.	Both.	6	14	36	147
Colfax av S.	22nd st.	34th st.	Both.	6	40	28	50
Dupont av S.	33rd st.	34th st.	East.	6	103	342	68
Elroy st.	Nicollet av.	Pillsbury av.	South.	6	12	12	342
Emerson av S.	22nd st.	Lake st.	Both.	6-10	490	54	115
Fremont av S.	Hennepin av.	34th st.	Both.	6	31	10	644
Garfield av.	Lake st.	33rd st.	Both.	6	204	364	41
Girard av S.	Hennepin av.	34th st.	Both.	6	16	61	568
Grand av.	24th st.	32nd st.	Both.	6	249	27	61
Harriet av.	27th st.	33rd st.	Both.	6	466	32	43
Hennepin av.	Lake st.	Lake st.	Both.	6	8	575	281
Humboldt av S.	Franklin av.	29th st.	Both.	6	14	14	1,041
Irving av S.	25th st.	27th st.	East.	6	375	132	22
Lagoon av.	Clinton av.	4th av S.	South.	6	33	122	132
Lake st.	Hennepin av.	James av.	Both.	6	257	33	122
Lyndale av S.	4th av S.	Irving av.	Both.	6-8	20	16	408
Newton av S.	26th st.	33rd st.	Both.	6-14	168	36	273
Nicollet av.	Oliver av.	Lake of the Isles blvd.	West.	12	1,460	20	1,628
25th st.	32nd st.	32nd st.	Both.	3-6-7-14	27	36	63
Pleasant av.	25th st.	Lake st.	Both.	6	226	50	276
Portland av.	24th st.	32nd st.	Both.	6-8	481	481	561
Sheridan av.	25th st.	25th st.	Both.	6	80	3	49
Stevens av.	Boulevard.	31st st.	Both.	6	50	6	56
2nd av S.	24th st.	31st st.	Both.	6	50	6	56

TABLE No. 22—Continued  
SIDEWALK LAID DURING THE SEASON OF 1914

STREET	FROM	TO	SIDE	Width in Feet	LENGTH		
					Artificial Stone Laid by Owner Lineal Feet	Artificial Stone Laid by City Lineal Feet	Total Feet
21st st.	Sheridan av.	Thomas av.	North.	6	123	150	150
22nd st.	Grand av.	Sheridan av.	Both.	6	80	123	123
24th st.	Chicago av.	Garfield av.	South.	6	287	80	80
25th st.	Grand av.	Lake of the Isles blvd.	Both.	6-14	406	8	295
26th st.	3rd av S.	Irving av.	Both.	6-8	406	12	418
27th st.	1st av S.	Lyndale av.	South.	6	30	8	38
28th st.	Grand av.	Hennepin av.	South.	16	109	8	109
29th st.	Findley pl.	Irving av.	Both.	6	120	577	697
31st st.	Fremont av.	Hennepin av.	North.	6	129	428	557
32nd st.	Lyndale av.	Collfax av.	North.	6-14	667	16	683
34th st.							
Total.					4,976	5,198	10,174
Cost {	Walk.				\$2,388.48	\$2,405.04	\$4,883.52
Inspection.					108.52	113.37	221.89
Total.					\$2,497.00	\$2,608.41	\$5,105.41
9th ward—							
Arthur av.	Division st.	Winter st.	East.	6		40	40
Broadway st.	Pierce st.	Buchanan st.	North.	6		111	111
Buchanan st.	20th av NE.	13th av NE.	East.	6		145	145
Central av.	20th av NE.	37th av NE.	Both.	6	10	560	560
5th st NE.	Central av.	26th av NE.	East.	6	102	86	178
15th av NE.	Monroe st.	Quincy st.	Both.	6	100	100	200
Garfield st.	22nd av NE.	23rd av NE.	Both.	6	125	172	297
Howard st.	22nd av NE.	23rd av NE.	Both.	6		129	129
Jefferson st.	16th av NE.	27th av NE.	Both.	6	40	718	758
Johnson st.	Winter st.	33rd av NE.	Both.	6	323	2,400	2,723
Lincoln st.	12th av NE.	29th av NE.	Both.	6		286	286
Lowry av.	5th st NE.	Garfield st.	Both.	6	672	80	752

Madison st.	14th av NE.	27th av NE.	Both.	421	280	701
19th av NE.	Washington st.	Stinson blvd.	Both.	273	1,855	2,128
6th at NE.	Broadway st.	22nd av NE.	Both.	40	64	104
7th at NE.	Central av.	3rd av NE.	West.	44	44	88
17th av NE.	6th st.	Washington st.	South.	139	20	159
Tyler st.	Summer st.	Broadway st.	East.	40	112	152
10th at NE.	Central av.	3rd av NE.	East.	90	1,082	1,172
13th av NE.	6th st.	Johnson st.	Both.	245	473	718
22nd av NE.	6th st.	McKinley st.	Both.	372	130	502
23rd av NE.	7th st.	Honoree st.	Both.	118	27	145
26th av NE.	7th st.	Howard st.	Both.	2,073	370	2,443
28th av NE.	Taylor st.	Hudson st.	Both.	234	29	263
30th av NE.	Lyons st.	Central av.	North.	126	82	208
Ulysses st.	22nd av NE.	23rd av NE.	East.	3	13	16
Washington st.	6th st.	27th av NE.	Both.	5,553	9,304	14,857
Total.				\$2,655.84	\$4,465.92	\$7,121.76
Cost	Walk.			120.67	202.92	323.59
Inspection.						
Total.				\$2,776.51	\$4,678.84	\$7,445.35
10th ward—						
Aldrich av N.	Lowry av.	38th av N.	Both.	343	46	389
Bryant av N.	Lowry av.	43rd av N.	Both.	563	307	870
Colfax av N.	34th av N.	40th av N.	Both.	80	845	925
DuPont av N.	29th av N.	41st av N.	Both.	1,396	1,510	2,906
Emerson av N.	Lowry av.	42nd av N.	Both.	1,820	820	2,640
Front av N.	26th av N.	42nd av N.	Both.	1,245	626	1,871
4th at N.	29th av N.	40th av N.	Both.	215	10	225
4th at N.	Lyndale av.	Humboldt av.	Both.	726	1,066	1,792
41st av N.	Washington av.	Colfax av.	Both.	891	40	931
42nd av N.	Emerson av.	Girard av.	North.	382	17	399
Girard av N.	Lowry av.	42nd av N.	Both.	399	382	781
Humboldt av N.	30th av N.	33rd av N.	Both.	2,098	834	2,932
Irving av N.	26th av N.	27th av N.	Both.	401	97	498
Knox av N.	29th av N.	Lowry av.	Both.	469	407	876
Lyndale av N.	Lowry av.	38th av N.	Both.	124	124	248
Morgan av N.	26th av N.	33rd av N.	Both.	2,069	1,309	3,378
Oliver av N.	27th av N.	28th av N.	Both.	183	581	764
Penn av N.	29th av N.	34th av N.	Both.	128	128	256
Queen av N.	27th av N.	29th av N.	Both.	614	614	1,228
6th st. N.	30th av N.	41st av N.	East.	160	160	320
			Both.	117	104	221



TABLE No. 22—Continued  
SIDEWALK LAID DURING THE SEASON OF 1914

STREET.	FROM	TO	SIDE	Width in Feet	LENGTH		
					Artificial Stone Laid by Owner Lineal Feet	Artificial Stone Laid by City Lineal Feet	Total Feet
3rd st N.....	30th av N.....	33rd av N.....	Both.....	6.....	92.....	27.....	119.....
27th av N.....	Aldrich av.....	Fremont av.....	North.....	6.....	48.....	16.....	64.....
30th av N.....	Emerson av.....	Russell av.....	Both.....	6.....	227.....	1,480.....	1,707.....
33rd av N.....	Emerson av.....	Morgan av.....	South.....	6.....	255.....	5.....	260.....
34th av N.....	Emerson av.....	Fremont av.....	Both.....	6.....	279.....	.....	279.....
35th av N.....	4th st.....	Bryant av.....	Both.....	6-10.....	202.....	3.....	205.....
36th av N.....	Fremont av.....	Girard av.....	Both.....	6.....	127.....	132.....	259.....
Washington av N.....	Emerson av.....	Sheridan av.....	Both.....	6.....	126.....	574.....	700.....
	38th av N.....	39th av N.....	West.....	6.....	50.....	.....	50.....
Total.....					14,492.....	11,594.....	26,086.....
Cost { Walk.....					\$6,956.16.....	\$5,565.12.....	\$12,521.28.....
Cost { Inspection.....					316.07.....	252.86.....	568.93.....
Total.....					\$7,272.23.....	\$5,817.98.....	\$13,090.21.....
11th ward—							
8th st S.....	10th av S.....	Railroad.....	North.....	8.....	43.....	34.....	77.....
11th av S.....	Franklin av.....	21st st.....	West.....	14.....	303.....	.....	303.....
Franklin av.....	10th av S.....	11th av S.....	South.....	14.....	203.....	.....	203.....
Minnehaha av.....	9th st.....	Franklin av.....	East.....	6.....	.....	240.....	240.....
24th st.....	27th av S.....	33rd av S.....	North.....	6.....	28.....	129.....	157.....
30th av S.....	9th st.....	Franklin ter.....	Both.....	6.....	721.....	138.....	859.....
31st av S.....	Franklin av.....	24th st.....	Both.....	6.....	.....	96.....	96.....
32nd av S.....	22nd st.....	24th st.....	Both.....	6.....	631.....	355.....	986.....
Total.....					1,920.....	992.....	2,912.....
Cost { Walk.....					\$925.92.....	\$476.16.....	\$1,402.08.....
Cost { Inspection.....					42.07.....	21.63.....	63.70.....
Total.....					\$967.99.....	\$497.79.....	\$1,465.78.....

## CITY OF MINNEAPOLIS

[illegible]

TABLE No. 22—Continued  
SIDEWALK LAID DURING THE SEASON OF 1914

STREET	FROM	TO	SIDE	Width in Feet	LENGTH		
					Artificial Stone Laid by Owner Lineal Feet	Artificial Stone Laid by City Lineal Feet	Total Feet
13th ward—							
Aldrich av S	44th st.	51st st.	West.	6	997	1,087	2,075
Beard av S	44th st.	47th st.	Both.	6	1,752	829	2,581
Blaisdell av	46th st.	48th st.	Both.	6	436	531	967
Bryant av S	36th st.	48th st.	Both.	6	856	1,824	2,680
Clinton av	35th st.	36th st.	East.	6	378	45	423
Colfax av S	40th st.	40th st.	Both.	6	415	172	587
Columbus av	37th st.	38th st.	West.	6	476	508	984
DuPont av S	36th st.	38th st.	East.	6	633	89	722
Elmwood pl.	Nicollet av.	Boulevard	Both.	6	311	8	311
Elmwood pl.	Nicollet av.	Wentworth av.	South.	6	407	8	407
Fremont av S	35th st.	50th st.	Both.	6	408	408	816
1st av S	35th st.	36th st.	Both.	6	360	297	657
5th av S	35th st.	37th st.	Both.	6	294	660	954
41st st.	Nicollet av.	Collax av.	Both.	6	264	429	693
42nd st.	Nicollet av.	Pleasant av.	Both.	6	124	271	395
44th st.	Lyndale av.	Bryant av.	North.	6	130	130	260
45th st.	Stevens av.	Blaisdell av.	Both.	6	1,350	186	1,536
47th st.	Lyndale av.	Beard av.	Both.	6	92	92	184
51st st.	Nicollet av.	2nd av S.	Both.	6	1,785	1,385	3,170
Garfield av	35th st.	40th st.	Both.	6	470	137	607
Grand av.	38th st.	38th st.	Both.	6	328	328	656
Girard av.	40th st.	50th st.	Both.	6	2,118	2,477	4,595
Harriet av.	40th st.	48th st.	Both.	6	872	14	886
Holmes av.	34th st.	36th st.	East.	6	348	348	696
Lyndale av.	41st st.	52nd st.	Both.	6	1,389	659	2,048
Luverne av.	Elmwood pl.	Minnehaha blvd.	West.	6	155	155	310
Nicollet av.	34th st.	40th st.	Both.	6	193	592	785
Oakland av.	37th st.	38th st.	Both.	6	1,067	128	1,195
Park av.	36th st.	43rd st.	Both.	6	1,400	1,020	2,420
Penn av.	Harriet blvd.	50th st.	Both.	6	80	1,205	1,285
Pillsbury av.	34th st.	47th st.	Both.	6	305	571	876

Pleasant av.	38th st.	50th st.	Both.	6	1,870	496	2,366
Portland av.	7th st.	48th st.	West.	6	59		59
Ristic's Lodge.	Pleasant av.	Nicolet av.	Both.	5	1,877	232	2,109
Sheridan av S.	39th st.	48th st.	Both.	6	1,314	216	1,530
Stevens av.	34th st.	40th st.	Both.	6		218	218
2nd av S.	34th st.	42nd st.	Both.	6	1,186	1,312	2,502
Thomas av S.	48th st.	48th st.	East.	6	1,052		1,052
3rd av S.	37th st.	41st st.	Both.	6	1,594		1,594
34th st.	Chicago av.	Collfax av.	South.	6		559	2,153
35th st.	Pleasant av.	Columbus av.	Both.	6	60	132	182
36th st.	Chicago av.	Bryant av.	Both.	6	130	565	595
37th st.	Chicago av.	Pleasant av.	Both.	6		139	139
38th st.	Chicago av.	Pleasant av.	Both.	6		39	550
39th av.	2nd av S.	Sheridan av.	Both.	4-6	511	547	774
Upton av S.	39th st.	47th st.	Both.	6	227	513	831
Vincent av S.	38th st.	47th st.	Both.	6	318	513	831
Washburn av S.	44th st.	47th st.	Both.	6	126	799	925
Wentworth av.	40th st.	52nd st.	Both.	6	84	467	551
Xerxes av S.	48th st.	51st st.	Both.	6	376	1,470	1,852
York av S.	48th st.	47th st.	Both.	6	1,623	752	2,375
Zenith av S.	48th st.	47th st.	West.	6	798	131	929
				6	418	190	608
Total					34,028	24,366	58,394
Cost	Walk				\$16,333.44	\$11,695.68	\$28,029.12
	Inspection.				742.05	531.32	1,273.37
Total					\$17,075.49	\$12,227.00	\$29,302.49

TABLE No. 23  
SUMMARY OF TABLE

WARDS	ARTIFICIAL STONE						TOTAL			
	Laid by Owner			Laid by City			Lineal Feet	Cost		
	Lineal Feet	Cost		Lineal Feet	Cost			Walk	Inspection	
		Walk	Inspection		Walk	Inspection				
First.....	1,097	\$526.56	\$23.92	2,377	\$1,140.96	\$51.48	3,474	\$1,667.52	\$75.76	\$1,743.28
Second.....	3,310	1,588.50	72.19	3,503	1,681.44	76.40	6,813	3,270.24	148.59	3,418.83
Third.....	5,463	2,622.24	119.15	7,364	3,534.72	150.60	12,827	6,156.96	279.75	6,436.71
Fourth.....	2,778	1,333.44	60.58	3,248	1,559.04	70.84	6,026	2,892.48	131.42	3,023.90
Fifth.....	1,817	872.16	39.62	1,008	483.84	21.98	2,825	1,356.00	61.60	1,417.60
Sixth.....	350	166.00	7.63	61	29.28	1.33	411	197.28	8.96	206.24
Seventh.....	12,432	5,981.76	261.79	16,304	7,825.92	355.59	28,766	13,807.68	627.38	14,435.06
Eighth.....	4,976	2,388.48	108.52	5,198	2,495.04	113.37	10,174	4,883.52	221.89	5,105.41
Ninth.....	5,533	2,655.84	120.67	9,304	4,465.92	202.92	14,837	7,121.76	323.59	7,445.35
Tenth.....	14,492	6,956.16	316.07	11,594	5,565.12	252.86	26,086	12,521.28	568.93	13,069.21
Eleventh.....	1,929	925.92	42.07	992	476.16	21.63	2,921	1,402.08	153.50	3,075.58
Twelfth.....	38,157	18,315.36	832.00	32,351	15,528.48	705.50	70,508	33,843.84	1,537.50	35,381.34
Thirteenth.....	34,028	16,333.44	742.05	24,366	11,695.68	531.32	58,394	28,029.12	1,273.37	29,302.49
Total.....	126,392	\$60,668.16	\$2,746.26	117,670	\$56,481.60	\$2,555.82	244,062	\$117,149.76	\$5,322.44	\$122,472.20
Miles.....										

## RATE OF ASSESSMENT PER LINEAL FOOT

Width in Feet	KIND	Rate
2	Artificial stone.....	\$0.16
4	Artificial stone.....	.32
6	Artificial stone.....	.48
8	Artificial stone.....	.64
15	Artificial stone.....	1.20

TABLE No. 24  
BRIDGES OVER RIVERS AND CREEKS

NAME	OVER	KIND	No. Spans	Total Length Feet	Width		Total Cost
					Road-way	Side-walk	
Franklin av. ....	Mississippi river.	Iron Pratt truss.	5	1,025	18 1/2	0	\$143,430.27
Forty-second av N. ....	Mississippi river.	Steel bow truss.	4	1,372	36	8	180,300.00
Hennepin steel arch.	West channel Mississippi river.	Concrete approach.	5				
Hennepin Island.	Mississippi river.	2 and 3 hinged arch.	2	544	50	12	200,375.32
Lake st. ....	Mississippi river.	Steel bent.	11	360	20	0	6,414.51
Plymouth av. ....	Mississippi river.	Iron braced arch.	6	1,270	33	6	274,000.00
		Steel bow truss.	6	1,561	36	8	152,417.00
Stone arch.	East channel Mississippi river.	Iron Pratt truss.	3		18	0	
Tenth av S. ....	Mississippi river.	1/2 stone arch and 1/2 steel girders.	5	354	50	12	70,427.00
Thirty-second av N. ....	Mississippi river.	Iron Pratt truss and wooden trestle	8	1,443	17	5 1/2	100,000.00
Washington av S. ....	Mississippi river.	Iron Pratt truss.	4	805	36	0	108,110.03
Gerber baths.	Mississippi river.	Iron bow truss.	5	836	30	0	108,700.07
First st and Sixth av S. ....	Mississippi river.	Iron Pratt truss.	0	1,084	34	7	212,048.47
Aldrich av N. ....	Minneapolis Mill Co.'s canal.	Concrete piers, wooden joists.	0	80	4		12,000.00
Bryant av N. ....	Bassett's creek.	Concrete arch.	14	223	30		1,001.52
Cedar Lake road.	Bassett's creek.	Stone arch.	1	30	32	0	3,000.00
Dupont av N. ....	Bassett's creek.	Stone arch and wooden trestle.	1	30	42	12	4,000.00
Dupont av N. (Elec. Short Line)	Bassett's creek.	Stone abutments, concrete floor.	1	400	40	11	9,235.75
Eighth av N. ....	Bassett's creek.	Concrete arch.	1	708	22		105.00
Fifth st N. ....	Bassett's creek.	Concrete slab.	1	20			31,637.05
Fifth st N. ....	Bassett's creek.	Concrete arch.	1	20	36	0	2,125.00
Fifth st N. ....	Bassett's creek.	Stone arch.	1	20	47 1/2	0	3,454.12
Fifth st N. ....	Bassett's creek.	Stone arch.	1	20	52	15	6,000.00
Fifth st N. ....	Bassett's creek.	Concrete floor.	1	244	52	15	8,000.00
Fifth st N. ....	Bassett's creek.	Stone arch.	1	20	40	11 1/2	6,149.04
Fifth st N. ....	Bassett's creek.	Concrete culvert.	1	134	32	0	7,064.00
Fifth st N. ....	Bassett's creek.	Concrete arch.	1	30	52	15	6,922.49
Second av N. ....	Bassett's creek.	Pile bridge.	1	20	17		140.27
Sixth av N. ....	Bassett's creek.	Concrete arch.	1	26	24	0	4,322.17
Sixth av N. near Keegan's Lake.	Bassett's creek at Dupont av.	Steel "I" beams and concrete.	1	150	18		6,026.57
Third av N. ....	Bassett's creek.	Stone arch.	1	31	52 1/2	15	10,633.03
Tenth av N. ....	Bassett's creek.	Stone arch.	1	28	22	12	7,154.40
Western av near Dupont.	Bassett's creek.	Concrete slab.	1	20	44		1,980.39
Western av near Upton.	Bassett's creek.	Concrete arch.	1	32	36	6	6,510.28

TABLE No. 24—Continued  
BRIDGES OVER RIVERS AND CREEKS

NAME	OVER	KIND	No. Spans	Total Length Feet	Width		Total Cost
					Road-way	Side-walk	
Washington av N.....	Bassett's creek.....	Stone arch.....	1	30	64	18	\$8,084.84
Cedar av.....	Minnehaha creek.....	Concrete arch.....	2	41	32	6	2,865.00
Chicago av.....	Minnehaha creek.....	Concrete arch.....	2	41	20	6	5,127.33
Hawthorn av.....	Minnehaha creek.....	Pile bent.....	1	35	48	6	200.00
Lyndale av.....	Minnehaha creek.....	Concrete arch.....	1	30	24	6	5,000.00
Minnehaha park.....	Minnehaha creek.....	Stone arch and concrete.....	1	32	48	8	20,000.00
Minnehaha av.....	Minnehaha creek.....	Steel arch and steel bents.....	9	620	18	6	40,000.00
Nicollet av.....	Minnehaha creek.....	Stone arch.....	1	35	48	6	5,982.87
Portland av.....	Minnehaha creek.....	Steel trestle.....	27	831½	19	6	18,640.00
Penn av.....	Minnehaha creek.....	Concrete arch.....	2	41	36	6	3,635.26
Thirty-fourth av S.....	Minnehaha creek.....	Concrete arch.....	1	30	34	6	5,352.32
Thirty-eighth av S.....	Minnehaha creek.....	Concrete arch.....	1	30	36	6	6,424.64
Xerxes av.....	Minnehaha creek.....	Concrete arch.....	1	60	36	6	4,637.00
Forty-fourth av N.....	Outlet to Lake Harriet.....	Wooden stringers.....	1	30	20	6	400.00
DuPont av N.....	Shingle creek.....	Corrugated iron culvert.....	2	31	20	6	200.00
Forty-fourth av N.....	Shingle creek.....	Concrete abutments, wooden str's.....	1	26	20	6	1,000.00
Humboldt av N.....	Shingle creek.....	Concrete arch.....	1	26	34	6	2,872.10
Lyndale av N.....	Shingle creek.....	Concrete arch.....	1	30	32	6	4,250.00
Osseo road.....	Shingle creek.....	Steel "I" beams and concrete.....	1	26½	32	6	4,000.00
Superior av.....	Horseshoe Lake.....	Pile bridge.....	1	18	27	6	1,027.48
Eight av S.....	University creek.....	Stone.....	1	209	24	18	881.16
Fifth st SE.....	University creek.....	Stone arch.....	1	40	40	12	1,000.00
Fourth st SE.....	University creek.....	Stone arch.....	1	40	40	12	1,000.00
Seventh av SE.....	University creek.....	Stone arch.....	1	40	40	12	7,309.07
University av SE.....	University creek.....	Stone arch.....	1	40	40	12	2,700.05
University av SE and 25th av SE.....	Bridal Veil creek.....	Stone arch.....	1	8	40	12	3,075.45
Marshall st near 26th av NE.....	Webber creek.....	Brick arch culvert.....	1	5' 8½"	42	12	1,000.00
Excelsior road.....	Canal between Lake Calhoun and Lake of the Isles.....	Stone arch.....	1	13	50	6	461.72
Lake st bridge, No. 1.....	Lake of the Isles, south side.....	Corrugated culvert.....	1	8	50	6	1,651.54
Bridge No. 3.....	Lake of the Isles, west side.....	Concrete arch.....	1	50	88	13	55,978.94
Bryant av.....	Shingle creek.....	Concrete arch.....	1	50	32	6	28,145.57
Collax av.....	Shingle creek.....	Concrete arch.....	1	20	18	1 side, 6	26,513.31
			1	20	18	1 side, 6	1,018.99
			1	20	18	1 side, 6	1,556.27

Aldrich av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	120	20	8	\$15,000.00
Borden av.	Elec. Short Line.	Steel girder.	4	109	24	6	7,500.00
Brantley and Central.	Great Northern Ry.	Wooden trestle.	4	337	30	8	79,477.81
Brantley and Central.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	120	40	6	15,000.00
Central and Broadway.	Great Northern Ry.	Steel girder.	2	40	40	6	55,136.86
Central and Ninth st.	Great Northern Ry.	Steel plate girder.	2	200	50	18	15,000.00
Colfax av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	120	100	8	50,000.00
Como and Tenth av.	Como av SE.	Iron plate girder.	4	116	100	8	15,000.00
Como and 23rd av SE viaduct.	St. P. & N. P. Ry.	Iron plate girder.	3	82	26	8	4,000.00
Church st.	G. N. Ry.; Osseo Branch.	Iron lattice girder.	1	78	42	10	4,000.00
Cedar Lake road.	Elec. Short Line.	Concrete slab.	1	35	34	6	12,015.00
Dean blvd viaduct.	Boulevard.	Iron girder.	3	94	9	8	5,200.00
DuPont av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	120	30	8	15,000.00
Emerson av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	120	30	8	15,000.00
First av S.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	115-41	36	8	18,000.00
First st N.	M. & St. L. and G. N. Ry.	Iron Pratt truss.	1	110	36	8	10,000.00
Fourth st N.	M. & St. L. and G. N. Ry.	Iron Pratt truss and plate girder.	17	516	36	6	48,000.00
Fifth st N.	M. & St. L. and G. N. Ry.	Iron Pratt truss and plate girder.	14	482	36	6	43,500.00
Fourth av N.	M. & St. P. and N. P. Ry.	Iron lattice girder.	1	48	28	8	5,000.00
5th st NE viaduct under Soo R. R.	M. E. and M. & St. L. Ry.	Iron Warren truss.	8	109	29	8	1,350.00
First st S near Third av.	Great Northern Ry.	Steel plate girder.	1	82	36	8	7,000.00
Fourth st NE.	Great Northern Ry.	Steel plate girder.	1	85	36	12	13,007.61
Fifth st NE.	Great Northern Ry.	Steel plate girder.	4	218	40	6	28,528.07
15th av SE near 8th st viaduct.	Fifteenth av SE.	Iron plate girder.	1	59	100	15	22,886.03
Fifteenth av SE.	Great Northern Ry.	Iron girder, steel girder.	3	100	50	15	80,822.00
Fourth st SE and Fifteenth av.	Great Northern Ry.	Iron girder, steel girder.	4	180	50	15	15,000.00
Fremont av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	120	30	8	15,000.00
Garfield av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	130	30	8	15,000.00
Grand av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	100	30	8	15,000.00
Harriet av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	100	30	8	15,000.00
Hennepin av.	M. & St. L. Ry.	Iron girder.	4	67	108	15 to 18	15,000.00
Hennepin av.	Great Northern Ry.	Iron girder.	7	240	56 to 106	12 to 18	16,000.00
Holden st.	M. & St. L. and G. N. Ry.	Iron girder.	3	126	32	8	33,610.00
Holden st.	Elec. Short Line, Gt. Nor. and M. & St. L. Ry.	Steel truss.	3	95	66	11	18,048.91
Hennepin av.	C. M. & St. P. Ry.	Steel plate girder.	3	125	40	6	12,000.00
Harvard st near Arlington st.	St. P. and N. P. Ry.	Steel bents.	5	469	36	8	34,789.72
Lyndale av.	M. & St. L. and G. N. Ry.	Pratt truss girder, wooden trestle.	19	36	50	8	30,000.00
Lyndale av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	120	50	8	30,000.00
Laurel av.	M. & St. L. and G. N. Ry.	Iron Pratt truss, lattice girder, wooden trestle.	4	1,374	18	6	84,492.13
W Lake st.	C. M. & St. P. and M. & St. L. Ry.	Single wooden truss, wooden trestle.	2	1,155	36	8	9,402.98



TABLE No. 24  
BRIDGES OVER RAILWAYS AND STREETS

NAME	OVER	KIND	No. Spans	Total Length Feet	Width		Total Cost
					Road-way	Side-walk	
Main st NE.	Great Northern Ry.	Steel plate girder.	1	44	56	9	34,946.13
Marshall st viaduct under Soo R. R.		Wooden trestle.	6	96			1,200.00
Nicollet st.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	116-4 1/2	50	14	1,200.00
Pillsbury av.	C. M. & St. P. H. & D. Div.	Steel plate girder.	1	230 1/2	18	6	25,000.00
Pleasant av.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	87	32	8	6,520.82
Plymouth av viaduct.	Under Soo Ry.	Concrete slab.	3	190	30	8	15,000.00
Plymouth av viaduct.	Under Omaha Ry.	Concrete slab.	3	75 1/2			8,000.00
Plymouth av viaduct.	Under N. P. Ry.	Steel plate girder.	3	84			8,000.00
Pleasant st.	Omaha Ry.	Steel plate girder.	3	82			10,000.00
Second st N.	St. P. and N. P. Rys.	Iron lattice girder.	3	95	27	8	6,000.00
Seventh st N.	M. & St. L. and G. N. Rys.	Steel and iron Pratt truss.	1	137	36	8	12,500.00
Superior av.	M. & St. L. and G. N. Rys.	Plate girder, Pratt truss, wooden trestle.	7	606	39	6	37,297.00
Second st S.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	116	16	6	63,378.00
Second st NE.	Great Northern Ry.	Steel plate girder.	1	112-6 1/2	30	8	15,000.00
Seventh st NE.	Great Northern Ry.	Steel plate girder.	1	59	40	12	16,463.59
Soo st viaduct.	Soo st.	Steel plate girder.	3	167	40	12	26,421.90
State st foot bridge.	St. P. and N. P. Rys.	Steel beams.	1	39	40		11,181.63
Stevens av.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	114-6	32	8	2,000.00
Third av S.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	112-6 1/2	30	8	15,000.00
Third st N.	M. & St. L. and G. N. Rys.	Iron Pratt truss and girder.	11	555	36	8	50,000.00
Twentieth av N viaduct.	Twentieth av N.	Steel plate girder.	3	106			10,000.00
W Twenty-fifth st.	M. & St. L. and G. N. Rys.	Iron and steel Pratt truss, wood approaches.	3	556	24		8,848.65
31st av S near 27th st viaduct.	Thirty-first av S.	Steel plate girder.	3	89	40		12,428.14
Tenth av S viaduct.	Tenth av S.	Iron plate girder.	1	46	125		25,000.00
Tenth av S viaduct.	Tenth av S.	Iron plate girder.	1	46	50		10,000.00
33rd av NE over N. P. Ry.	Howe truss.	Howe truss.	11	566.55	18	6	14,000.00
W Thirty-sixth st viaduct.	36th st near Lake Calhoun.	Iron plate girder.	1	36	24		6,185.48
University av NE over Soo Ry.	33rd av NE.	Wooden trestle.	20	300	24	6	3,350.00
University av NE over Soo Ry.	34th av NE.	Wooden trestle.	9	145	24	6	1,850.00

TABLE No. 25—Continued  
BRIDGES OVER RAILWAYS AND STREETS

NAME	OVER	KIND	No. Spans	Total Length Feet	Width		Total Cost
					Road- way	Side- walk	
University av NE.....	Great Northern Ry.....	Steel plate girder.....	1	84	40	12	17,996.62
University av and 28th av NE.....	G. N. and N. P. Rys.....	Steel plate girder.....	2	188	2-18½	7	50,000.00
University av SE.....	Great Northern Ry.....	Steel girder.....	3	177½	38	12	49,648.00
Washington av N.....	M. & St. L. and G. N. Rys.....	Iron Pratt truss.....	1	109	66	15	18,000.00
Western av.....	M. & St. L. and G. N. Rys.....	Iron girder, steel girder.....	3	177	2-20	11	25,000.00
Western av near Upton.....	G. N. Ry, Osseo branch.....	Steel girder.....	3	112.4	30	6	12,325.69
Western av.....	M. St. P. R. & D. E. T. Co.....	Concrete slab.....	1	36	.....	6	10,450.00
Washington av viaduct.....	Washington av.....	Iron girder.....	.....	.....	.....	.....	35,902.64

## THIRD AVENUE SOUTH BRIDGE

Started sounding for piers near beak in lime rock January 12th and finished March 6th, previous soundings having been made by the Concrete Steel Engineering Company, New York.

Ground was broken for the new bridge January 12th at 3 p. m., at Main street and 1st avenue southeast. Started excavation and grading for tailtower cableway February 28th at 1st street and 3rd avenue south. Both cableways were completed August 17th.

By the end of year piers 2, 3, 4 and 5 were completed and No. 6 footing course completed and being cleaned for next pour, the shaft form being erected. Cofferdam for No. 7 complete.

## 42nd AVENUE NORTH AND PLYMOUTH AVENUE BRIDGES

42nd avenue north and Plymouth avenue bridges were completed, the only part remaining was building of reinforced concrete sidewalks. The three old spans at west approach of Plymouth avenue bridge were taken down and stored at Ramsey street, near Northern Pacific tracks, for future use or to be sold.

Omaha Railroad Company filled the whole space up to end of new bridge and the space between will be filled next year, taking place of old wooden approach.

The old railroad crossing at Penn avenue and Bassett's creek near Chestnut avenue was eliminated by an overhead steel structure and wooden approach, built by Great Northern railroad. Our department built a 134-foot long concrete arch culvert over Bassett's creek just north of Great Northern steel bridge, the course of the creek being straightened, and the old wooden bridge abandoned.

A wooden trestle approach was built on California street northeast, connecting with west approach of Northern Pacific railroad bridge, over their tracks at 33rd avenue northeast, the cost of same being paid by 1st ward.

New concrete sidewalks were built over stone arch bridge over east channel.

The steel arch bridge was repaired with creosoted blocks, the concrete underneath being resurfaced.

1st street and 6th avenue south over canal was replanked and paved with creosoted planks and blocks.

20th avenue north bridge, over river was reinforced for street cars, besides being replanked and paved with creosoted blocks.

Superior avenue bridge over Brown lake was rebuilt, all material being new, except floor stringers, which were taken from old Plymouth avenue bridge, being about 150 4x16-20-foot Washington fir, in good condition, thereby saving over \$400.00.

A retaining wall and fence was built at South side west approach to Western avenue bridge over Great Northern railroad, Osseo branch, and a concrete retaining wall and fence built by Great Northern east approach, south side.

Water tower Prospect Park was completed by bridge department.

Covering of Bassett's creek from Dupont and 6th avenue north towards river was started in September and about 450 lineal feet finished by the end of the year.

Seawall along west shore Mississippi river from bridge pier Washington avenue bridge 1,300 feet southward, was started June 12th and about 600 feet completed by the end of year, besides excavation and foundation for 1,110 feet more.

14th avenue south bridge. Soundings were made for proposed new bridge on 14th avenue south and Cedar to 10th avenue southeast.

## SUMMARY OF EXPENDITURES

3rd avenue south bridge.....	\$239,329.55	
Plymouth avenue bridge.....	17,417.11	Bond issue.. \$265,333.11
42nd avenue north bridge.....	7,302.29	
14th avenue south bridge.....	1,284.16	
Covering Bassett's creek.....	38,804.61	38,804.61
Bridge repairs.....	44,581.93	44,581.93
Sea wall.....	31,713.17	31,713.17
Total.....	\$380,432.82	\$380,432.82

## HARBOR WALL

Kind	Number	Value
Axes, chopping.....	3	\$2.50
Axes, hand.....	2	1.50
Augers, sand.....	3	6.00
Buckets, large iron, 11 yard.....	2	20.00
Blocks, 12-inch single wooden.....	1	2.00
Blocks, 12-inch double wooden.....	1	3.35
Blocks, 6-inch double wooden.....	1	.90
Blocks, 6-inch single wooden.....	1	.50
Battery, electric blasting with wires.....	1	10.00
Bars, crow.....	5	2.00
Brooms, wire.....	3	1.60
Bars, claw and bolt pullers.....	2	4.00
Boiler, shell.....	1	25.00
Buckets, small iron.....	2	10.00
Car, concrete, 1 yard.....	1	15.00
Engine, American hoisting derrick, stiff leg, complete.....	1	1,000.00
Drill, Sullivan, rock, complete (steam).....	1	250.00
Drill, plug and feather (churn).....	6	.50
Drills, jumper, rock.....	6	15.00
Dies, set taps (balls).....	1	2.25
Dies, stack for pipe.....	1	2.50
Hooks, grab, set of.....	1	12.00
Hammer, sledge, 25 lb.....	5	10.00
Hammer, sledge, 8 lb.....	5	3.00
Hammer, claw.....	1	.50
Jacks, screw.....	2	1.50
Lanterns.....	6	5.25
Jacks, ratchet.....	2	12.80
Pipe, iron, black, 1-inch.....	1,000 ft.	42.80
Jacks, car.....	2	18.00
Picks, with handles.....	2	9.00
Pipe cutter.....	1	1.00
Pipe, 16-inch lengths water for sand heater.....	4	75.00
Pump, diaphragm hand with hose.....	1	125.00
Pump, force with hose.....	1	37.00
Pump, cent. with 11 h. p. gasoline engine.....	1	98.00
Plow, R. R. two horse.....	1	25.00
Plugs and feather.....	1 doz.	2.50
Rope, manila.....	1 coil	33.00
Scrapers, slush.....	3	15.00
Shovels.....	2½ doz.	25.00
Spouting, concrete 36. ft. open.....	36 ft.	7.00
Shovels, scoop.....	2	1.00
Vise, bench, combination.....	1	8.00
Watch, tackle.....	1	10.00
Wheelbarrows.....	1 doz.	45.00
Saw, cross cut (5½ ft.).....	1	2.00
		<hr/>
		\$2,048.95

INVENTORY OF MATERIAL AND TOOLS ON HAND AT DUPONT AVENUE  
NORTH BRIDGE 12-31-14

Material or Tool	Amount	Value
Hand axe.....	1	\$5.50
Hand saw.....	1	1.00
Chain.....	1	2.50
Shovels.....	6	5.00
Picks.....	4	2.50
Pails.....	2	.40
Hoe.....	1	.50
		<hr/>
		\$12.40

## INVENTORY OF MACHINERY AT 3rd AVENUE SOUTH BRIDGE JAN. 1, 1915

Material	Condition	Present Value	Total
2 large chain blocks.....	Good	\$100.00	
1 4-ton duplex chain block.....	New	76.00	
5 single 10-inch wood blocks.....	New	10.00	
13 single 8-inch wood blocks.....	New	26.00	
12 double 8-inch wood blocks.....	New	24.00	
8 double 6-inch wood blocks.....	New	14.00	
7 single 3-inch wood blocks.....	New	5.00	
2 single 4-inch wood blocks.....	New	1.00	
3 double 4-inch wood blocks.....	New	2.00	
9 double 10-inch wood blocks.....	New	18.00	
8 12-inch wire rope snatch.....	Good	35.00	
1 6-inch wire rope snatch.....	Good	3.00	
7 6-inch single wood blocks.....	Good	7.00	
2 3-inch double wood blocks.....	Good	1.50	
3 2-inch double wood blocks.....	Good	1.50	
1 12-inch steel snatch block.....	Good	4.00	
8 8-inch wood snatch blocks.....	Good	8.00	
2 10-inch wood snatch blocks.....	Good	2.50	
140 ft. 1- $\frac{1}{2}$ -inch shafting.....	Good	35.00	
2 10x10-inch steel pulleys.....	Good	8.00	
2 8x10-inch steel pulleys.....	Good	8.00	
1 10x12-inch steel pulley.....	Good	4.00	
1 10 $\frac{1}{2}$ x29-inch steel pulley.....	Good	7.80	
1 5 $\frac{1}{2}$ x24-inch steel pulley.....	Good	4.50	
1 4 $\frac{1}{2}$ x12-inch steel pulley.....	Good	2.15	
2 5 $\frac{1}{2}$ x12-inch steel pulleys.....	Good	2.30	
2 4x7 $\frac{1}{2}$ -inch steel pulleys.....	Good	1.70	
1 10x16-inch steel pulley.....	Good	3.90	
2 4 $\frac{1}{2}$ x10-inch steel pulleys.....	Good	1.80	
1 5x18-inch steel pulley.....	Good	2.80	
1 8x10-inch wood pulley.....	Good	1.90	
1 24-inch driving wheel.....	Good	2.00	
1 8-inch wood pulley.....	Good	2.00	
1 6-inch iron pulley.....	Good	2.07	
1 12-inch iron pulley.....	Good	2.85	
3 ft. 1- $\frac{1}{2}$ -inch shafting.....	Good	3.00	
3 ft. 2-inch shafting.....	Good	3.00	
50 ft. 4-inch belting, leather.....	Good	38.50	
14 ft. 2-inch belting, leather.....			
12 ft. 4-inch belting, leather.....	Good	12.00	
20 ft. 10-inch belting, rubber.....			
15 ft. 1-inch belting, leather.....	New	25.00	
20 ft. 4-inch belting, leather.....			
10 ft. 4-inch belting, leather.....	Old	10.00	
50 ft. assorted belting, leather.....			
2 ft. 1 $\frac{1}{2}$ -inch shafting.....	Good	2.00	
1 2800-lb. pile hammer.....	Good	50.00	
1 follower block.....	New	25.00	
2 sets of leads.....	Good	35.00	
1 pile driver.....	Old	50.00	
1 150 h. p. boiler complete.....	Good	800.00	
2 Twin Lidgerwood engines and cableways, complete, not including towers.....	New	23,000.00	
1 25 h. p. steam tractor.....	Old	300.00	
2 1-yard Cube concrete mixers with set of repair parts.....	New	2,000.00	
1 barge complete with derrick 60-ft. boom, not including engine.....	Good	750.00	
3 American hoisting engines.....	Good	1,800.00	
1 5 h. p. G. E. motor.....	Good	65.00	
2 25 h. p. Wagner motors.....	Good	500.00	
1 15 h. p. F. W. motor.....	Good	156.00	
2 10-inch electric centrifugal pumps with motors.....	Good	800.00	
3 6-inch electric centrifugal pumps with motors.....	Good	1,250.00	
2 portable electric drills.....	Good	\$180.00	
1 Ingersol steam drill.....	Good	86.00	
3 drills, 12, 14, 16-foot.....	Good	7.20	
1 circle saw.....	Good	140.00	
1 band saw.....	Good	100.00	
1 saw filing machine.....	Poor	5.00	
2 emery wheels.....	Good	25.00	
2 6-inch foot valves.....	Good	8.50	
1200 19-foot steel piling.....	Good	5,400.00	
172 20-foot steel piling.....			
70 feet 1 $\frac{1}{2}$ -inch steam hose.....	Good	17.50	
50 feet 1 $\frac{1}{2}$ -inch rubber hose.....	Good	12.50	
1 steam force pump.....	Good	100.00	
130 cable carriers.....	New	190.00	
1020 feet 30-lb. steel rail.....	Good	105.00	

**INVENTORY OF MACHINERY AT 3rd AVENUE SOUTH BRIDGE JANUARY 1,  
1915—Continued**

Material	Condition	Present Value	Total
350 feet 16-lb. steel rail	Poor	31.00	
4 dump cars	Good	120.00	
2 tramway cars	Good	40.00	
2 concrete hoppers	Good	120.00	
4 sets concrete chutes	Poor	50.00	
3 2-yard steel buckets	Good	300.00	
3 1-yard steel buckets	Good	150.00	
1 Vice	Good	11.00	
1 No. 224 bench vise	Good	11.20	
1 No. 214 bench vise	Good	11.00	
1 No. 229 bench vise	Good	11.00	
1 No. 113 pipe vise	Good	1.75	
2 No. 24 Alaska stoves	Good	20.00	
6 No. 18 Alaska stoves	Good	30.00	
2 office stoves	Good	14.00	
16 shaft hangers	Good	35.00	
1 Champion forge	Good	31.50	
2 grind stones	Good	5.00	
1 14-inch machine hack saw	Good	10.00	
1 set pipe dies, 1-in. to 2-in.	Good	2.40	
2 1½-inch shaft couplings	Good	6.00	
1 pair U. S. iron cutters	New	21.60	
1 Champion drill press	Good	16.00	
1 anvil	Good	13.95	
1 pipe cutter and bolt machine	Good	133.00	
1 10-inch hand blower	Good	2.65	
1 10-inch belt-blower	Good	5.20	
1 set machine taps	Good	2.50	
1 set machine drills, ⅝ to 1½-inch	Good	40.00	
1 set bolt dies	Good	30.00	
1 set taps	Good	2.50	
1 slush scraper	Good	4.50	
7 shaft hangers	Good	50.00	
1 No. 2 hand force pump	Good	10.00	
1 No. 2 hand force pump	Good	5.00	
1 screw punch	Good	50.00	
3 steel sheaves	Good	9.00	
12 cast iron trunnions	Good	36.00	
1 Armstrong handdie	Good	10.00	
2 wood tremies for concrete	Good	30.00	
2 wood skips for cableway	Good	25.00	
		<hr/>	\$39,710.22
			300.00
			<hr/>
			\$40,010.22

**INVENTORY OF CABLES AND ROPE ON HAND AT 3rd AVENUE BRIDGE  
JANUARY 1, 1915**

Material	Condition	Present Value	Total
1 coil 1½-inch rope	New	\$15.00	
1½ coils 1-inch rope	New	20.00	
1,000 feet old rope in shed, all sizes	Poor	10.00	
18 balls binding twine	Good	2.00	
1200 feet 1-inch cable	Good	66.00	
510 feet 1-inch cable	Good	5.10	
500 feet 1-inch cable	Good	22.50	
3000 feet cable, assorted sizes and lengths	Good	30.00	
4,000 feet rope, assorted sizes and lengths	Good	150.00	
150 feet 1-inch rope	New	2.00	
		<hr/>	\$329.60

## INVENTORY OF TOOLS ON HAND AT 3rd AVE. SO. BRIDGE, JANUARY 1, 1915

Material	Condition	Present Value	Total
20 hammers, carpenter	Good	\$10.00	
30 sledges	Good	25.00	
12 sledge handles	New	1.20	
6 saws, carpenter	Good	6.00	
8 cross-cut saws	Good	16.00	
6 pick handles	New	.60	
14 picks	Good	14.00	
2 pevies	Good	2.00	
3 cant hooks	Good	3.00	
10 carry hooks	Good	10.00	
12 pike poles	Good	15.00	
15 hammer handles	New	1.50	
15 shovels, round point	Good	12.00	
20 shovels, square point	Good	16.00	
6 shovels, long handle	Good	6.00	
24 ice chisels	Good	24.00	
15 files, taper, assorted	New	1.50	
87 raincoats	Fair	40.00	
144 rain hats	New	15.00	
69 rain pants	Good	50.00	
2 bolt pullers	Good	3.00	
12 crow bars	Good	12.00	
5 3-foot turn buckles	Good	10.00	
6 S nail pullers	Good	6.00	
4 track chisels	Good	3.00	
4 wire brushes	Good	2.00	
10 bolt wrenches	Good	5.00	
6 1/2-inch ship augers	Good	6.00	
10 plyers	New	10.00	
2 hatchets	Good	1.00	
2 steel squares	Good	2.00	
6 small trowel	Fair	1.50	
1 large trowel	Fair	.25	
1 large saw setter	Good	2.50	
1 small saw setter	Good	2.00	
4 monkey wrenches	Good	4.00	
3 Stilson wrenches	New	5.00	
4 timber dollies	Good	40.00	
2 pair bolt cutters	New	5.00	
2 levels, carpenter	Good	2.00	
2 1/2-inch augers	New	2.00	
12 1-inch-1/2-inch augers	New	12.00	
2 Yale door locks	New	2.00	
2 4-inch paint brushes	New	.50	
3 1/2-inch twist drills	New	3.00	
25 pairs leather soled hip boots	Fair	84.00	
17 hoes	Fair	8.50	
6 calcimine brushes	Fair	1.50	
1 post hole auger	Fair	2.00	
6 1/2-inch augers for electric drill	Good	5.00	
7 common lanterns	Good	4.00	
1 dozen common lantern globes	New	.60	
1 hand forge	Poor	5.00	
3 barrel trucks	New	15.45	
1 16-foot ladder	New	4.00	
4 row boats	Fair	40.00	
2 lumber carriages	Good	40.00	
29 pairs hip boots	No good	10.00	
1 16-inch steel sheave	Good	6.00	
1 dozen oil pants	No good	.50	
1 dozen oil coats	No good	.50	
2 1/2-inch band saws	Good	2.00	
2 1/2-inch band saws	Good	2.00	
1 1-inch band saw	Good	2.50	
1 18-inch cross circular saw	Good	15.50	
1 14-inch cross circular saw			
1 14-inch rip circular saw			
1 12-inch rip circular saw			
1 16-inch rip circular saw			
20 feet 2 1/2-inch fire hose	New	10.00	
50 feet 1-inch wire wound steam hose	New	25.00	
30 feet 1/2-inch Norway chain	New	75.00	
2 axes	Good	2.00	

## BLACKSMITH TOOLS

1 drill set	Good	1.00
3 swedges, 1-inch, 1/2-inch, 1/4-inch	Good	1.50
1 B.S. setter	Good	1.00
2 flatters	Good	2.00
4 center pins	Good	2.00

**INVENTORY OF TOOLS ON HAND AT 3rd AVE. SO. BRIDGE, JANUARY 1,  
1915—Continued**

Material	Condition	Present Value	Total
1 steel square.....	Good.....	1.50	
1 set forge tools.....	Good.....	10.00	
2 Buckeye lever jacks.....	Good.....	18.00	
5 screw jacks.....	Good.....	66.00	
15 wheelbarrows.....	Good.....	22.50	
4 No. 2 large Diets lanterns.....	Good.....	16.00	
16 Cold Blast lanterns.....	Good.....	15.00	
12 railroad lanterns.....	Good.....	5.00	
6 railroad lanterns.....	No Good.....		
6 steam boat ratchets.....	Good.....	30.00	
2 large scoops.....	Good.....	2.01	
1 pair skidding tongs.....	Good.....	3.10	
10 wire potato shovels.....	Good.....	8.00	
3 steel splitting wedges.....	Good.....	3.50	
1 railroad spike puller.....	Good.....	1.50	
1 mattock.....	Good.....	.50	
1 40-gallon can for gas.....	Good.....	5.00	
25 feet 1½-inch water hose.....	Good.....	10.00	
25 feet 1½-inch steam hose.....	Good.....	20.00	
1 pair horse tongs, ice.....	Good.....	5.00	
1 pair hand tongs, ice.....	Good.....	2.50	
6 14-inch flat files.....	New.....	.60	
6 10-inch rat tail files.....	New.....	.60	
3 10-inch flat files.....	New.....	.30	
6 8-inch flat files.....	New.....	.60	
3 small S wrenches.....	New.....	.90	
7 1-inch shackles.....	New.....	7.00	
12 1-inch shackles.....	New.....	16.00	
7 1½-inch shackles.....	New.....	25.00	
1 14-inch main wrench.....	New.....	2.00	
4 thermometers.....	New.....	.85	
14 canvas tarps.....	Poor.....	50.00	
24 Yale locks.....	Good.....	12.00	
			<b>\$1,115.05</b>
			<b>25.00</b>
			<b>\$1,140.05</b>

**LUMBER ON HAND JANUARY 1, 1915, AT 3rd AVENUE BRIDGE**

Material	Present Value	Total
2 cableway towers, 165 feet high.....	\$10,000.00	
1 boiler house, 16x30x18.....	75.00	
1 oil shed, 8x8x8.....	15.00	
1 machine shop, 30x60x12-14.....	150.00	
3 warehouses, 12x14x8.....	75.00	
1 office, 12x14x8.....	25.00	
1 office, 20x30x12-14.....	250.00	
1 laborers' shed, 10x12x8.....	25.00	
1 carpenter shop and warming rooms, 30x60x12-18.....	150.00	
1 platform, 120x50 2-inch plank oiled.....	200.00	
1 cement shed, 225x20x14-12.....	750.00	
1 rock bin, 125x27x12.....	1,000.00	
1 sand bin, 74x27x12.....	750.00	
1 mixing shed, 34x25x12.....	200.00	
1 tramway.....	500.00	
1 railroad trestle.....	1,000.00	
		<b>\$15,165.00</b>

**Record of lumber received previous to September 1, 1914, cannot be obtained at this office, except as estimated in above list of buildings.**

**Total amount of lumber used between Sept. 1 and Dec. 31, 1914..... \$4,022.84**

This lumber was mostly used for pier forms.



## INVENTORY OF GENERAL SUPPLIES ON HAND AT 3rd AVENUE BRIDGE

JANUARY 1, 1915

Material	Condition	Present Value	Total
500 4x4x1-inch Ls.	New	\$25.00	
1 gallon red barn paint	New	1.50	
100 1x23-inch belts	New	5.00	
750 1x18-inch belts	New	35.00	
100 1x15-inch belts	New	5.00	
4 dozen sheets emery	New	.50	
750 1x61-inch lag screws	New	35.00	
800 Crosby clips, 1, 1, 1-inch	New	200.00	
2 splitting wedges	Good	2.00	
36 Carbo rubbing blocks	New	36.00	
56 1x12-inch bolts	New	2.80	
400 1x17-inch bolts	New	20.00	
175 1x28-inch bolts	New	8.75	
100 1x20-inch bolts	New	5.00	
460 1x23-inch bolts	New	23.00	
110 1x21-inch bolts	New	5.50	
300 1x13-inch bolts	New	15.00	
75 1x24-inch bolts	New	3.75	
200 1x18-inch bolts	New	10.00	
12 rolls of No. 12 wire	New	7.00	
6 rolls of stove pipe wire	New	3.00	
2 barrels salt	New	4.00	
107 kegs of nails	New	250.00	
10 kegs of boat spikes	New	20.00	
3 drums 1-inch rod couplings	New	90.00	
3 empty oil barrels	Good	3.00	
4 coils bail wire	New	2.00	
2200 feet 1x11-inch pipe	Good	85.60	
60 pipe fittings assorted	Good	3.00	
Assorted fittings	Good	50.00	
1 yard rubber gasket	New	3.50	
3 gallons cling surface	New	5.00	
Meas. electric supplies	Good	10.00	
1 1/2 kegs 1-inch nuts	New	3.00	
1 keg 1-inch nuts	New	2.00	
25 pounds 1 1/2x1-inch rivets	New	2.50	
250 or 25 pounds 1x1 1/2-inch bolts	New	2.50	
50 pounds 1x1 1/2-inch machine bolts	New	5.00	
800 feet electric pipe conduit	Good	80.00	
1000 feet electric cable	Fair	10.00	
30 feet 1x11-inch bolts	Good	1.50	
100 1x12-inch bolts	Good	5.00	
4 rolls friction tape	New	.60	
2 1/2 rolls met. belt lacing	New	2.00	
15 pounds National lead solder	New	3.50	
38 17-inch hack saws	New	1.00	
2 dozen emery cloths	New	.24	
30 12-inch hack saws	New	.90	
15 pounds Magnolia babbitt	New	3.00	
1 can Smooth-On	New	.50	
14 cans Dixon flake graphite	New	1.50	
1000 burlap sacks	Good	50.00	
12000 sacks of cement	New	3,750.00	
800 cubic yards crushed rock	New	1,120.00	
500 cubic yards sand	New	375.00	
15 sacks fire clay	New	7.50	
12 rolls No. 12 wire	New	6.00	
10 sacks of coarse salt	New	5.00	
2 barrels plumbago	New	30.00	
5 rolls red rosin paper	New	3.00	
			<b>\$8,005.89</b>

**INVENTORY OF MATERIALS AND TOOLS ON HAND AT BASSETT'S CREEK  
DECEMBER 31, 1914**

Materials or Tools	Amount	Value
Adzes.....	2	\$4.00
Adze handle.....	1	.50
Axes.....	3	2.50
Axe handles.....	10	1.25
Axes, hand.....	6	3.50
Augers.....	9	3.75
Bars, pinch.....	19	4.75
Barrows, wheel.....	43	64.50
Barrows, stone.....	1	2.90
Boxes, tool.....	6	45.00
Blocks.....	9	18.00
Brooms.....	7	4.50
Brace and bit.....	1	5.35
Chains.....	5	8.00
Cant hooks.....	18	16.00
Cant hook handles.....	4	.75
Concrete mixer.....	1	900.00
Concrete carts.....	8	144.00
Chisels.....	16	6.25
Drills.....	7	23.25
Dies and taps.....	1	5.00
Files.....	6	.50
Forks, pitch.....	3	1.75
Grind stone.....	2	7.50
Gasoline.....	75 gallons	8.25
Hooks.....	8	7.20
Hammers.....	20	10.00
Hoes.....	1	.50
Hack saw and blade.....	4	5.00
Jacks.....	5	15.00
Levels.....	4	5.50
Lanterns.....	15	11.00
Lantern globes.....	16	.80
Mauls.....	6	2.50
Nails, keg.....	1	1.85
Nail pullers.....	5	2.50
Oil, hard.....	10 lbs.	.70
Oil cans.....	6	3.00
Old men.....	2	20.00
Pliers.....	5	10.00
Pulleys.....	2	.50
Pipe cutter.....	1	1.00
Plummetts.....	1	.25
Pumps, gasoline.....	4	150.00
Pails, water.....	4	.80
Planes.....	1	1.00
Punches.....	6	1.50
Picks.....	48	16.00
Pick handles.....	14	1.75
Rope.....	570 ft.	16.00
Rubber hose.....	50 ft.	7.50
Rubber boots.....	55 pairs	160.00
Rakes.....	2	.60
Saws, cut.....	8	16.00
Saws, hand.....	7	6.00
Shovels, earth.....	63	52.00
Shovels, snow.....	1	1.00
Squares.....	5	3.75
Salamanders.....	5	5.00
Sheathing caps.....	2	1.50
Sheathing pullers.....	1	1.00
Stoves.....	1	5.25
Salt.....	4 barrels	5.00
Torches, gasoline.....	11	15.25
Torches, blow.....	1	2.00
Vise.....	1	20.00
Wire.....	6 rolls	12.00
Wrenches.....	16	13.50
		<hr/>
		\$1,893.45





**TABLE No. 28**  
**ADDITIONS TO MINNEAPOLIS APPROVED 1914**

NAME OF ADDITION	No. of Trac- ing	Date of Approval	of Lots	Area Placed Exclusive of Rear- rangements Sub-Divi- sions, etc. Feet
Walton's Seventh addition to Seven Oaks.....	1,444	Jan. 9, 1914	92	651,100
Auditor's subdivision No. 90.....	1,445	Sept. 13, 1913		
Auditor's subdivision No. 89.....	1,446	Nov. 30, 1913		
Christopher's addition.....	1,447	Mar. 27, 1914	14	81,781
Columbia Terrace.....	1,448	May 15, 1914	7	99,313
Central High Terrace.....	1,449	April 14, 1914	14	81,544
Fitzpatrick's addition.....	1,450	Mar. 27, 1914	6	31,388
Triangle addition.....	1,451	May 8, 1914	11	45,450
Marquette addition.....	1,452	June 12, 1914	101	678,040
Sherwood addition.....	1,453	June 12, 1914	40	196,669
Towle's addition.....	1,454	May 29, 1914	14	77,216
West Boulevard addition.....	1,455	June 12, 1914	12	90,169
Farnsworth addition.....	1,456	June 26, 1914	56	314,029
Oakland Park.....	1,457	July 10, 1914	60	424,955
Linden Grove.....	1,458	Aug. 6, 1914	28	218,187
Auditor's sub. No. 88.....	1,459	July 23, 1914		
Northland Oaks.....	1,460	Sept. 11, 1914	60	405,459
Pear's addition.....	1,461	Sept. 11, 1914	15	109,286
Gillespie's Camden Park addition.....	1,462	Feb. 27, 1914	18	104,742
Auditor's sub. No. 92.....	1,463	Oct. 22, 1914		
Hunter's subdivision.....	1,464	Dec. 11, 1914	10	
John A. Lane's addition.....	1,465	Nov. 27, 1914	7	56,334
Total.....				3,665,662
Acres.....				8,420

TABLE No. 29  
STREET SPRINKLING FOR THE SEASON 1914

The sprinkling of streets is done under the direction of the Street Commissioners and Aldermen of each ward. An assessment is levied in advance each year upon all assessable property on the street sprinkled at a uniform rate per front foot in each ward. The amount of tax thus raised by special assessment is made sufficient only to cover the balance after deducting from the estimated per front foot the amount of money on hand in the fund at the beginning of the year for which the assessment is made. The city furnishes the water free. The Street Ry. Co. pays a proportion of the whole cost for sprinkling its tracks on all streets.

WARDS	SPRINKLING TEAMS					COST			ASSESSMENT				
	Number Employed	Average Time Per Team Months	Monthly Wages	Average Per Team Lineal Feet	Average Assessed Frontage Team Feet	Incidental	Total Including Pay Rolls	Per Front Foot of Assessed Frontage	Front Foot		Paved Streets	Dirt Streets	Total
									Paved Cents	Dirt Cents			
First.....	15	6.80	\$110.00	6,550	11,045	\$1,852.72	\$13,077.70	\$7.5	7	6	\$3,437.49	\$7,479.91	\$10,917.40
Second.....	16	7.06	110.00	7,678	12,830	3,375.37	15,797.68	7.7	7	6	4,299.90	7,926.13	12,226.03
Third.....	33	7.78	110.00	7,516	13,330	3,908.60	32,128.77	7.3	6, 8	6	12,648.31	15,889.42	28,537.73
Fourth.....	34	7.25	115.00	6,255	10,760	1,759.04	30,114.85	8.2	8, 10, 11, 12	5	14,583.04	9,967.34	24,550.38
Fifth.....	19	7.34	115.00	7,835	13,185	2,065.79	18,116.29	7.2	5, 6, 9, 12	5, 8	11,730.39	3,295.50	15,025.89
Sixth.....	10	6.46	115.00	6,324	10,487	458.67	7,890.47	7.5	9	6	2,373.09	4,710.24	7,083.33
Seventh.....	17	7.72	110.00	9,785	17,275	4,311.32	18,748.62	6.4	7	5	500.31	14,312.77	14,813.08
Eighth.....	43	6.70	115.00	7,413	13,285	5,846.08	38,971.44	6.8	6, 8, 10, 12	6, 8, 10	7,977.08	29,177.93	37,155.01
Ninth.....	23	6.34	110.00	6,180	10,670	789.16	16,834.20	6.9	6, 7	6	2,572.88	12,646.45	15,219.33
Tenth.....	14	6.78	110.00	7,455	13,305	1,292.78	11,891.19	6.4	5, 8	5	1,139.43	8,277.15	9,416.58
Eleventh.....	14	6.49	110.00	7,105	12,455	542.33	10,537.62	6.1	8	5	1,808.55	7,588.38	9,396.93
Twelfth.....	10	6.70	110.00	5,958	10,539	1,310.76	8,678.02	8.2	7	5, 8	1,507.97	4,611.57	6,119.54
Thirteenth.....	13	9.28	110.00	6,850	30,380	11,050.99	24,310.52	6.1	7	5	2,197.14	18,170.13	20,367.27
Totals.....	261		Av. 7.679		13,465	\$38,563.51	\$247,097.37	7.04			\$66,775.58	\$144,052.92	\$210,828.50



**TABLE No. 30**  
**STREET SPRINKLING ORDERED FOR THE SEASON 1915**

WARDS	ASSESSMENT				FRONTAGE								
	Per Front Foot		Paved Streets	Dirt Streets	Total Paved and Streets	Assessment			Exempt		Totals		
						Paved Streets Feet	Dirt Streets Feet	Total Paved and Streets Feet	Paved Streets Feet	Dirt Streets Feet	Paved Streets Feet	Dirt Streets Feet	
	Paved Streets Cents	Dirt Streets Cents											
First.....	7	6	\$3,556.50	\$7,102.46	\$11,119.05	56,523	119,373	175,896	.....	2,847	56,523	122,220	178,743
Second.....	7	6	4,761.56	9,291.37	14,052.93	68,023	154,857	222,880	5,288	7,417	73,311	162,274	235,585
Third.....	8	5	15,478.37	15,951.78	31,430.15	210,002	265,861	475,863	4,645	10,737	214,647	276,598	491,245
Fourth.....	8, 10, 11, 12	5	15,705.71	10,245.54	25,951.25	179,116	204,910	384,026	6,038	22,754	185,154	257,664	412,818
Fifth.....	5, 7, 10, 12	5	14,088.44	2,956.30	17,044.74	199,565	50,970	250,535	5,369	6,805	204,934	57,775	262,709
Sixth.....	9	6	2,414.24	4,673.43	7,087.67	26,525	77,891	104,716	847	4,454	27,672	82,345	110,017
Seventh.....	7	6	1,826.85	17,825.71	19,452.56	23,241	297,095	320,336	1,230	8,153	24,471	305,248	329,719
Eighth.....	6, 8, 10	6, 8, 10	8,434.50	28,855.01	37,289.51	102,436	470,540	572,976	1,050	9,003	103,486	479,543	583,029
Ninth.....	10, 12	6	3,324.28	13,187.84	16,512.12	41,554	219,797	261,351	9,961	6,806	51,515	226,403	277,918
Tenth.....	8	5	1,982.88	9,225.33	11,208.21	28,327	167,735	196,062	.....	3,456	28,327	171,191	199,518
Eleventh.....	7	5	1,808.39	7,580.66	9,389.05	22,605	151,613	174,218	593	6,595	23,198	158,298	181,406
Twelfth.....	8	5	1,500.60	6,418.98	7,919.58	21,337	116,709	138,146	200	3,018	21,637	119,727	141,364
Thirteenth.....	7	6	2,724.29	23,120.41	25,844.70	40,726	385,340	426,066	.....	2,590	40,726	387,930	428,656
Totals.....			\$77,806.70	\$156,494.82	\$234,301.52	1,020,380	2,682,691	3,703,071	35,221	94,435	1,055,601	2,777,126	3,832,727







TABLE No. 32  
ANALYTICAL DATA—WATER PURIFICATION PLANT, 1914

	Jan.		Feb.		Mar.		April		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.		Average	
	R.	C.E.	R.	C.E.	R.	C.E.	R.	C.E.	R.	C.E.	R.	C.E.	R.	C.E.	R.	C.E.	R.	C.E.	R.	C.E.	R.	C.E.	R.	C.E.	R.	C.E.
Total mineral residue...	234	236	240	240	215	217	187	191	194	198	198	198	210	219	195	198	207	202	201	197	218	216	235	234	209	211
Volatile residue...	103	99	103	105	89	89	82	75	90	74	99	71	94	83	83	77	87	83	90	82	91	88	96	93	92	84
Alkalinity as Ca. Co. 3.	194	179	202	190	194	171	155	131	133	100	120	80	131	86	143	119	146	130	160	141	180	164	203	191	162	140
Pern. hard. as Ca. Co. 3.	9	27	7	13	7	19	1	29	8	41	7	49	5	48	4	25	4	21	7	24	2	22	12	18	7	29
Chlorides...	2.5	3.3	2.3	2.7	2.5	3.0	1.7	2.5	1.5	2.8	1.8	3.3	1.5	3.2	1.5	3.5	2.0	3.8	2.3	3.4	2.5	3.5	2.3	3.3	2.0	3.2
Turbidity...	9	0	5	0	5	0	20	0	27	0	41	0	35	0	18	0	17	0	11	0	7	0	5	0	17	0
Color...	29	15	20	14	22	16	39	19	64	23	99	26	91	26	53	16	42	15	45	15	34	14	27	14	49	17
Odor...	0	0	0	0	0	0	VF	0	VF	0	VF	0	FM	0	VF	0	0	0	0	0	0	0	0	0	0	0
Free ammonia as N...	.044	.035	.095	.082	.115	.108	.032	.035	.034	.035	.045	.066	.029	.033	.011	.015	.015	.016	.022	.019	.028	.027	.036	.025	.043	.041
Alb. ammonia as N...	.266	.202	.216	.200	.233	.200	.257	.194	.325	.205	.343	.202	.353	.200	.255	.165	.277	.152	.223	.161	.214	.160	.320	.176	.270	.186
Nitrates as N...	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr	Tr
Nitrates as N...	.224	.174	.220	.190	.292	.276	.160	.118	.107	.083	.246	.173	.210	.176	.145	.120	.140	.092	.195	.140	.190	.150	.176	.130	.192	.152
Oxygen consumed	6.10	3.80	4.90	4.30	5.11	4.00	6.46	4.20	12.40	7.33	15.24	6.17	17.53	7.33	11.85	5.10	9.32	5.47	7.80	4.35	9.05	4.30	6.18	4.25	9.58	5.18
Free carbon diox. Co. 2	4	8.5	7	9	5	7	0	10	0	19	0	24	0	25	0	14	0	11	0	13	0	10	0	7	5	13
Bacteria per c. c. A...	100	5	75	4	250	46	630	43	490	101	1330	28	965	6	725	3	675	4	430	4	250	5	185	5	510	12
Bacteria per c. c. G...	405	4	420	32	290	28	800	46	675	91	690	28	1,185	8	825	4	895	5	825	4	490	4	1,020	5	1,000	11

## Remarks:

R=Raw Water.  
CE=Filter Effluent from filter plant.  
A=Agar Agar 24 hrs. at 37°c.  
G=Gelatine, 48 hrs. at 20°c.

C.M. 1378 RY



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ASTOR, LENOX AND  
TILDEN FOUNDATIONS

TABLE No. 33  
SUMMARY OF WATER MAINS LAID PREVIOUS TO JANUARY 1, 1915

Size in Inches	Kind	Feet	Feet	Miles	Cost
6	.....	1,665,235.5			
8	.....	427,104.0			
10	.....	16,147.2			
12	.....	367,941.6			
16	.....	155,141.7			
20	.....	3,103.0			
24	.....	109,135.3			
30	.....	9,845.1			
36	.....	43,904.9			
48	.....	11,562.3			
			2,808,117.6	531.84	5,996,787.42
6	Cast iron hyd. con. add.		38,165.9	7.37	
2, 1½, 1	Wrought iron pipe	1,415.3			
6	Cast iron in Anoka county	942.5			
4	Cast iron in Anoka county	1,109.2			
6	Cast iron in street service	3,236.2			
8	Cast iron in street service	138.0			
16	Cast iron in street service	274.8			
			6,906.0	1.30	19,612.70
	Reservoir pipe lines and fil-				
	tration plant:				
30	Cast iron pipe	293.0			
34	Cast iron pipe	15.8			
42	Cast iron pipe	4,933.5			
48	Cast iron pipe	6,833.5			
50	Steel pipe	33,564.4			
54	Steel pipe	15,632.2			
60	Cast iron pipe	42.9			
			61,315.3	11.61	751,005.20
50	Steel pipe	33,564.4			
54	Steel pipe	15,632.2			
60	Cast iron pipe	402.9			
	Miscellaneous—				
2, 1½, 1	Wrought iron pipe in Mill st.	932.5			
16	Drain pipe from reservoir	15,758.0			
20	Drain pipe	16,421.9			
			33,162.4	6.28	56,154.12
	Grand total				\$6,823,559.44

TABLE No. 34.  
WATER MAINS LAID DURING THE SEASON OF 1914

STREET	FROM	TO	Size in Inches	Number of Extension	Length in Feet	Cost	Rate of Assess- ment per Front Foot
Abbot av S.	44th st.	N. line lot 13, blk. 29, Oliver Park add.	6	3054	321.0	\$522.34	.81
Aldrich av N.	34th av N.	35th av N.	6	2961	660.4	998.96	.75
Aldrich av S.	47th st.	48th st.	6	3050	1325.0	1,744.84	.66
Bryant av N.	47th av	48th av	6	2956	661.0	1,535.83	.90
Buchanan st.	29th av NE.	30th av	6	3095	623.4	1,138.79	.90
California st.	S. line lot 9, blk. 2, N. P. add.	22nd av NE.	6	2992	345.0	538.07	.80
Cedar Lake rd.	Upton av.	Superior av.	8	3015	137.0	362.51	.90
Cedar Lake blvd.	Dean blvd.	28th st.	12	3020	1,402.0	3,916.96	.85
Chowen av.	28th st.	Cedar Lake av.	8	3022A	468.9	976.43	.85
Clinton av.	28th st.	St. Paul av.	8	3022B	487.7	1,052.07	.85
Collins av.	24th st.	25th st.	6	2952	666.8	930.21	.65
Colfax av N.	38th av	39th av	6	2959A	559.2	1,344.73	.90
Colfax av S.	39th av	40th av	6	2959B	722.4	3,000.72	.90
Columbus av.	49th st.	Minnehaha blvd.	6	3116	2,060.3	2,455.00	.60
Columbus av.	38th st.	39th st.	6	3113	616.0	775.68	.63
Columbus av.	40th st.	41st st.	6	2981B	638.0	858.56	.67
Columbia blvd.	41st st.	42nd st.	6	2981A	604.0	934.37	.77
Crystal Lake av.	387 feet W of Architect av.	382 feet W of Architect av.	6	3083	285.0	453.62	.80
Dean blvd.	26th av	Lowry av.	8	2958	3,198.9	6,063.68	.73
Dorman av.	W. line lot 1, blk. 2, Walton Hill add.	Cedar Lake blvd.	12	3018	411.0	1,506.74	.90
Dupont av N.	46th av	N. line lot 14, Dorman's 3rd add.	6	2970	485.7	785.75	.81
Dupont av N.	5th av	36 feet 5 in. S. of S. line of 6th av.	6	3009	441.0	724.03	.53
Dupont av N.	33rd av	36th av	8	3032	2,026.6	3,380.83	.71
Dupont av N.	38th av	39th av	8	3031	645.0	994.61	.65
Drew av	43 1/2 st.	44th st.	6	3056	290.4	396.53	.68
Eirey st (29 1/2)	Nicollet av.	Blaisdell av.	6	3024	362.3	624.81	.86
Emerald st SE.	Sharon av.	N. line lot 15, blk 1, Watson's P. P. add.	6	3061	776.6	1,222.58	.79
Emerson av N.	37th av N.	38th av N.	6	3034	620.0	956.07	.77
Emerson av N.	40th av	41st av	6	2957	728.0	2,962.85	.90
11th av N.	Fremont av.	Grand av.	6	3064	376.0	742.83	.90
11th av S.	40th st.	44th st.	6	2985	2,632.4	3,375.66	.64

18th av SE.	15th st.	C. M. & Sa. P. Ry. right of way	8	2999	232.5	581.39	90
France av.	42nd st.	44th st.	8	3058	1,514.7	2,577.94	72
Franklin av.	25th av S.	26th av S.	8	2983	407.0	661.25	81
Fronten av S.	30th st.	31st st.	6	3115	741.7	932.32	83
1st av S.	S. line lot 6, blk 3, Bernheim's add.	S. line lot 3, blk 2, Wolverton & Lewis' add.	6	3049	407.0	622.40	76
1st av NE.	4th st.	Central av.	6	3037	1,032.7	3,257.25	90
4th av N.	Knox av.	Logan av.	6	3088	339.0	567.60	86
4th av S.	29th st.	Lake st.	6	3017	537.6	910.59	85
5th av S.	30th st.	S. line lot 3, blk 2, Wolverton & Lewis' add.	6	3043	482.0	793.47	83
15th av S.	S. line lot 1, blk 2, Elliott's add.	21st st.	6	3102	178.0	362.13	90
15th av S.	36th st.	37th st.	6	3119	605.0	791.00	65
15th av NE.	University av.	4th st.	6	2936	393.8	2,560.54	90
40th av S.	38th st.	39th st.	6	2972B	665.3	994.83	75
40th av S.	39th st.	40th st.	6	2972A	709.0	1,045.23	73
40th av S.	40th st.	41st st.	6	2965	635.0	917.28	70
40th av E.	42nd st.	43rd st.	8	2975	330.0	662.02	79
41st st.	Columbus av.	Chicago av.	6	2982	318.0	573.82	90
41st av S.	39th st.	40th st.	6	3107	721.0	1,014.62	70
41st av N.	Bryant av.	Colfax av.	6	2960	337.0	632.08	90
42nd av N.	Girard av.	James av.	12	3100	1,003.3	2,146.12	67
43rd av S.	40th st.	42nd st.	6	2973	1,276.0	1,922.10	76
43rd st.	Drew av.	France av.	6	3037	640.8	1,099.95	85
44th st.	Reard av.	Drew av.	8	3055	674.1	1,192.52	72
44th av N.	W. line lot 4, blk 3, Harvey's add.	Penn av.	6	3035	1,770.0	2,365.01	67
45th av S.	29th st.	Lake st.	6	3108	592.8	804.25	68
47th av S.	45th st.	S. line lot 5, blk 3, Walton, Mississippi Heights	6	3106	232.6	426.83	90
48th st W.	Pleasant av.	Lyndale av.	12	2979	1,385.5	3,206.64	70
49th st.	Pleasant av.	Harriet av.	6	3042	460.0	788.53	86
49th st.	Sheridan av.	Thomas av.	6	3043	325.8	442.21	68
50th st.	Pleasant av.	Harriet av.	6	3114	471.0	978.63	72
51st st.	Minnehaha blvd.	Girard av S.	8	2978	183.1	406.73	84
Garfield st.	22nd av NE.	23rd st.	6	3029	678.0	972.16	72
Garfield st.	46th st.	47th st.	6	3047	1,942.0	2,420.82	62
Girard av N.	4th av.	5th av.	6	3005	450.0	876.94	90
Girard av N.	38th av.	39th av.	6	3033	623.0	803.14	64
Girard av N.	42nd av.	43rd av.	6	3098	597.8	896.23	74
Girard av S.	50th st.	51st st.	8	2980	813.8	1,378.50	68
Grant st.	Spruce pl.	Willow st.	6	3010	213.0	418.06	90
Gramercy av.	2nd av.	3rd av.	6	3016	369.5	645.38	89
Groveland ter.	DuPont av.	Emerson av.	8	3007	315.1	738.19	88
Harriet av.	40th st.	42nd st.	6	3044	1,226.0	1,756.97	71
Harriet av.	46th st.	48th st.	6	3046	1,296.0	1,989.03	76



TABLE No. 34  
WATER MAINS LAID DURING THE SEASON OF 1914

STREET	FROM	TO	Size in Inches	Number of Extension	Length in Feet	Cost	Rate of Assess- ment per Front Foot
Abbot av S.	44th st.	N. line lot 13, blk. 29, Oliver Park add.	6	3054	321.0	\$522.34	.81
Aldrich av N.	34th av N.	35th av N.	6	2861	660.4	998.96	.75
Aldrich av S.	47th st.	48th st.	6	3050	1325.0	1,744.84	.66
Bryant av N.	47th av	48th av	6	2856	623.4	1,535.83	.90
Buchanan st.	29th av NE.	30th av	6	3085	623.4	1,138.79	.90
California st.	S. line lot 9, blk. 2, N. P. add.	22nd av NE.	6	2092	335.0	538.07	.80
Cedar Lake rd.	Upton av.	Superior av.	8	3026	137.0	362.51	.90
Cedar Lake blvd.	Dean blvd.	28th st.	12	3029	1,402.0	3,916.96	.85
Chowen av.	28th st.	Cedar Lake av.	8	3029A	468.9	976.43	.85
Clinton av.	28th st.	St. Paul av.	8	3022B	487.7	1,052.07	.85
Colfax av N.	38th av	39th av	6	2956	666.8	930.21	.65
Colfax av N.	38th av	40th av	6	2956A	659.2	1,344.73	.90
Colfax av S.	39th st.	Minnehaha blvd.	6	2956B	722.4	3,900.72	.90
Columbus av.	38th st.	41st st.	6	3113	2,060.3	2,455.00	.60
Columbus av.	40th st.	41st st.	6	2981B	616.0	775.08	.63
Columbus av.	397 feet W of Architect av.	42nd st.	6	2981A	638.0	858.56	.67
Columbia blvd.	26th av	Lowry av.	6	3083	604.0	934.37	.77
Crystal Lake av.	W. line lot 1, blk. 2, Walton Hill add.	Cedar Lake blvd.	8	2958	285.0	453.62	.80
Dean blvd.	46th av	N. line lot 14, Doonan's 3rd add.	12	3018	3,198.9	6,093.08	.73
Dorman av.	5th av	36th av	6	2970	411.0	1,506.74	.90
Dupont av N.	33rd av	36th av	6	3009	485.7	785.75	.81
Dupont av N.	38th av	39th av	8	3032	441.0	724.03	.83
Drew av.	431 st.	44th st.	8	3031	2,026.6	3,380.83	.71
Eiroy st (29th)	Nicollet av.	Blandell av.	8	3056	645.0	994.61	.65
Emerald at SE.	Sharon av.	N. line lot 15, blk 1, Watson's N. P. add.	6	3024	290.4	396.53	.68
Emerson av N.	37th av N.	38th av N.	6	3061	362.3	624.81	.86
Emerson av N.	40th av	41st av	6	3034	776.6	1,222.58	.79
11th av N.	Fremont av.	Grand av.	6	2957	620.0	956.07	.77
11th av S.	40th st.	44th st.	6	3064	728.0	2,962.85	.90
				2985	376.0	742.83	.90
					2,632.4	3,376.65	.64

18th av SE	15th st.	C. M. & St. P. Ry. right of way	8	2999	232.5	581.39	90
France av.	42nd st.	44th st.	8	3058	1,514.7	2,577.94	72
Franklin av.	25th av S.	26th av S.	6	2863	661.25	81	81
*Fremont av S.	50th st.	51st st.	6	3115	741.7	932.32	63
1st av S.	S. line lot 6, blk 3, Bernstein's add.	44th st.	6	3049	407.0	622.40	76
1st av NE	4th st.	Central av.	6	2837	1,032.7	3,257.25	90
*4th av N.	Knox av.	Logan av.	6	3088	329.0	567.60	86
*4th av S.	28th st.	Lake st.	6	3017	537.6	910.59	85
*5th av S.	38th st.	S. line lot 3, blk. 2, Wolverton & Lewis add.	6	3043	482.0	763.47	83
*15th av S.	S. line lot 1, blk. 2, Elliott's add.	21st st.	6	3102	178.0	362.13	90
*15th av S.	38th st.	38th st.	6	3119	605.0	791.00	90
15th av NE	University av.	4th st.	6	2836	383.8	2,560.54	90
40th av S.	38th st.	38th st.	6	2872B	665.3	994.83	75
40th av S.	38th st.	40th st.	6	2872A	709.0	1,048.23	73
40th av S.	52nd st.	53rd st.	6	2865	655.0	917.28	70
40th st E.	42nd av.	43rd av.	8	2876	330.0	662.02	79
*41st st.	Columbus av.	Chicago av.	6	2882	318.0	573.82	90
41st av S.	38th st.	40th st.	6	3107	721.0	1,014.62	70
41st av N.	Bryant av.	Collfax av.	6	2860	337.0	632.08	90
42nd av N.	Grand av.	James av.	12	3100	1,003.3	2,146.12	67
43rd av S.	40th st.	42nd st.	6	2873	1,276.0	1,922.10	76
43rd st.	Drew av.	France av.	6	3057	640.8	1,099.95	85
*44th av N.	Beard av.	Drew av.	8	3055	674.1	1,192.52	72
*45th av S.	W. line lot 4, blk. 3, Harvey's add.	Penn av.	6	3035	1,770.0	2,355.01	67
*47th av S.	29th st.	Lake st.	6	3108	592.8	801.25	68
48th st W.	45th st.	S. line lot 5, blk. 3, Walton, Mississippi Heights	6	3106	232.6	428.83	90
*48th st.	Pleasant av.	Lyndale av.	12	2879	1,385.5	3,206.64	70
*49th st.	Pleasant av.	Harriet av.	6	3042	460.0	784.53	86
*50th st.	Sheridan av.	Thomas av.	6	3053	325.8	442.21	68
*51st st.	Pleasant av.	Harriet av.	8	3114	471.0	978.63	72
*Gardner st.	Minneapolis Blvd.	Girard av S.	8	2878	182.1	406.73	84
*Gardner st.	22nd av NE.	23rd st.	6	3029	178.0	972.16	72
*Gardner st.	40th st.	40th st.	6	3047	1,942.0	2,420.82	62
*Girard av N.	40th av.	50th st.	6	3005	450.0	876.94	90
*Girard av N.	38th av.	39th av.	6	3033	623.0	803.14	94
*Girard av N.	42nd av.	43rd av.	6	3088	997.8	886.23	74
*Girard av S.	50th st.	51st st.	6	2850	513.8	1,378.50	68
*Grant st.	Spruce pl.	Willow st.	6	3016	213.0	418.06	90
*Gramsey av.	2nd av.	3rd av.	6	3019	309.5	945.38	89
*Groveland ter.	DuPont av.	W. line lot 3, blk. 2, Johnson av.	6	3007	315.1	738.19	88
Harriet av.	40th st.	41st st.	6	3044	1,226.0	1,766.97	71
Harriet av.	46th st.	45th st.	6	3046	1,296.0	1,989.03	76

TABLE No. 34—Continued  
WATER MAINS LAID DURING THE SEASON OF 1914

STREET	FROM	TO	Size in Inches	Number of Extension	Length in Feet	Cost	Rate of Assessment per Front Foot
*Humboldt av N.	41st av.	43rd av N.	12	3101	1,427.0	3,331.47	.78
*Irving av N.	31st av.	Chestnut av.	6	3096	275.5	929.49	.90
*Irving av N.	32nd av.	32nd av.	6	3030	615.7	983.81	.80
*Irving av N.	32nd av.	32nd av.	6	3089	642.0	874.14	.68
*James av N.	41st av.	42nd av.	6	3063	610.0	928.63	.76
*James av N.	41st av.	42nd av.	6	2954	641.0	894.28	.70
*Johnson st NE.	41st av.	42nd av.	12	3036	1,930.0	4,193.95	.71
*Lake st.	29th av.	12th ft. W. of E. line of lot E.	8	3021	280.0	838.05	.90
*Lakeside av.	Excelsior av.	W. 1st. End Sub.	6	2946	351.7	461.32	.66
*Madison st NE.	Park pl.	Lyndale av.	6	3028	513.0	695.50	.68
*9th st S.	9th st.	Minnehaha av.	6	3060	408.8	624.68	.76
*19th st S.	22nd av.	23rd ave.	6	3038	411.0	611.59	.73
*Park pl.	8th st.	9th st.	6	2902	432.0	774.87	.80
*Pierce st NE.	N. line lot 19, blk. 3, Oak Lake	Lakeside av.	6	2945	448.4	760.88	.85
*Plymouth av.	Add in Border av.	N. line lot 24, blk. 1, Brown's add.	6	3094	1,025.7	1,524.20	.74
*Polk st NE.	Vincent av.	Washburn av.	16	3001	330.8	1,043.19	.73
*Portland av.	31st av.	N. line lot 19, blk. 5, Chute 1st add.	6	3027	986.0	1,326.63	.67
*Queen av N.	41st st.	44th st.	8	2977	1,908.5	4,493.53	.89
*Randolph st NE.	27th av.	N. line lot 9, blk. 1, Frissell Penn	6	3096	350.4	457.36	.65
*Russell av N.	Hawthorn av.	30th av.	6	2935	1,945.0	3,117.23	.79
*Russell av N.	27th av.	Chestnut av.	6	3004	622.2	875.71	.70
*Seymour av.	Hamline av.	28th av.	6	2955	656.5	903.05	.68
*Sheridan av.	29th av.	Arthur av.	6	3121	643.5	921.70	.72
*Sheridan av S.	Lake Harriet blvd.	N. line lot 6, blk. 2, Gardners' add.	6	3097	470.3	667.14	.71
*Snelling av.	41st st.	49th st.	6	3051	936.0	1,239.33	.66
*Stevens av.	43rd st.	42nd st.	6	3110	776.3	1,067.45	.69
*St. Paul av.	W. line lot 93, West End 2nd div	44th st.	6	3145	722.7	1,208.60	.83
		Chowen av.	6	3091	439.9	734.25	.84

*Superior av.	Union av.	Yerxes av.	16	3008	987 0	2 931.27	78
*2nd av S.	18th st.	18th st.	6	3014	1 246 0	2 032.36	.41
*2nd av S.	18th st.	18th st.	6	3089	436 4	672.15	.77
*6th av S.	48th st.	48th st.	6	3048	620 0	955.40	.77
*6th av SE.	6th st.	7th st.	6	2983	413 0	559.55	.68
*7th st NE.	22nd av.	23rd av.	6	3084	340 0	441.93	.55
*16th av S.	4th st.	5th st.	6	2949	384 0	639.45	.87
*16th av S.	38th st.	40th st.	6	3118	1 284 0	1 562.06	.61
*16th av N.	Logan av.	E. line alley between Logan and Morgan avs.	8	3066	154 2	507.15	.90
*17th av S.	37th st.	38th st.	12	2950	865 7	1 570.59	.67
*17th av S.	38th st.	40th st.	8	3117	1 295 7	2 025.74	.93
*Thomas av S.	Lake Harriet blvd.	49th st.	8	3052	1 229 7	1 854.18	.75
*12th av NE.	2nd st.	3rd st.	6	3085	341 5	1 975.86	.90
*13th av S.	36th st.	37th st.	6	2951	627 3	961.51	.76
*13th av S.	40th st.	S. line lot 7, blk. 2, William Heights add.	6	3090	354 0	496.41	.70
*20th av NE.	4th st.	5th st.	6	2996	378 0	675.51	.89
*21st st.	Elliot av.	10th av.	6	2947	376 0	531.69	.71
*21st av N.	Fremont av.	Girard av.	6	2944	392 7	580.74	.90
*22nd av NE.	Monroe st.	Quincy st.	8	3026	404 0	738.37	.84
*22nd av N.	Girard av.	Fremont av.	6	3003	319 7	530.14	.82
*22nd st E.	Nicollet av.	1st av.	6	2948	270 1	458.37	.78
*22nd st W.	Irving av S.	James av S.	6	2990	378 2	551.89	.76
*23rd av SE.	Farmount av.	Elm st.	6	2998	576 2	1 423.58	.71
*23rd av S.	38th st.	39th st.	6	3109	983 0	1 940.58	.90
*23rd av SE.	University av.	38th st.	12	3084	983 0	1 940.58	.90
*26th st W.	Lyndale av.	Aldrich av.	6	3092	431 5	698.72	.80
*26th av SE.	Nicollet av.	Blaisdell av.	8	2938	361 0	733.06	.90
*26th av SE.	Essex st.	Delaware st.	6	3038	656 0	991.55	.72
*26th st.	Salmage av.	Division st.	6	3035	184 0	395.57	.90
*26th st.	S. line lot 8, blk. 7, Hull's add.	26th st.	6	3016	872 1	1 993.56	.73
*26th st.	Chowen av.	Cedar Lake av.	12	3016	872 1	1 993.56	.73
*26th av S.	43th st.	50th st.	6	3039	1 247 0	1 630.01	.65
*30th av S.	9th st.	S. line lot 10, blk. 1, Cook's Riverdale add.	6	3037	210 5	510.18	.90
32nd st.	3rd av S.	Clinton av.	6	2989	389 3	760.39	.90
32nd st.	Blomington av.	16th av S.	8	2991	380 0	640.72	.72
*32nd av S.	24th st.	25th st.	6	3103	661 5	954.85	.71
*33rd av S.	Lake st.	32nd st.	6	2971	1 116 7	1 598.94	.73
*33rd av S.	42nd st.	45th st.	12	2976	1 082 3	4 491.93	.72
34th av S.	1st av S.	Blaisdell av.	6	2987	1 801 7	1 325.15	.82
34th av S.	Lake st.	33rd st.	6	2968	1 840 3	2 728.43	.74
36th st.	1st av S.	Blaisdell av.	8	2986	807 8	1 446.99	.75
36th st E.	35th av.	36th av.	8	2969	390 0	1 732.83	.85
*36th av S.	26th st.	27th st.	12	3120	611 5	1 636.56	.90

TABLE No. 34—Continued  
WATER MAINS LAID DURING THE SEASON OF 1914

STREET	FROM	TO	Size in Inches	Number of Extension	Length in Feet	Cost	Rate of Assessment per Front Foot
36th av S	28th st.	Lake st.	12	2966	1,322.5	3,205.62	.76
36th av S	36th st.	37th st.	12	2964	696.8	1,562.89	.69
37th st.	1st av S	Blaisdell av.	6	2988	811.5	1,152.68	.71
37th av S	28th st.	29th st.	6	3104	558.0	785.39	.71
37th av S	48th st blvd	49th st.	6	3111	516.0	929.76	.90
Ulysses st (A)	22nd av NE	23rd av	6	3025	685.0	727.16	.81
University av.	26th av NE	26th av NE	6	2995	330.0	532.20	.81
Upton av S	N. line lot 1 blk. 4, Cottage City add.	38th st.	6	3059	361.4	423.85	.70
Vincent av N	N. line lot 18, Quirk & Harrop add.	14th av N	6	3087	321.9	492.57	.77
Vincent av N	36th av	39th av	6	2983	1,952.0	2,554.33	.66
Warwick st SE	Sharon av	Hamline av.	6	2997	645.0	936.67	.72
Washburn av	Plymouth av.	Farwell av.	6	3002	897.6	1,356.43	.76
Washburn av S	S. line lot 5, blk. 26, 2nd div.	32nd st.	6	3112	3,015.0	3,981.23	.64
Willow st.	Remington park.	15th st.	6	3011	408.5	700.25	.85
Total					115,092.4	\$203,111.12	

To be assessed in 1915.

SUMMARY			
Pipe	6	82,021.3	\$130,780.04
Pipe	8	17,498.6	33,632.56
Pipe	12	14,354.7	34,724.06
Pipe	16	1,217.8	3,974.46
Total		155,092.4	\$203,111.12
Incidental improvements			13,783.56
Total			\$216,894.68

TABLE No. 35

LEVELS RUN, GRADES SET, SURVEYS AND CROSS SECTIONS MADE  
DURING THE SEASON 1914

Total of number of levels on streets.....	34
Total of number of feet of levels.....	30,514
Total of number of miles of levels.....	5,779
Total of number of grades set.....	2,171
Total of number of surveys made.....	63
Total of number of cross sections made.....	127
Total of number of feet of cross sections.....	223,518
Total of number of miles.....	42,333

TABLE No. 35

REPORT OF INSPECTIONS OF OUTSIDE ELECTRIC WIRES AND WIRING  
WORK DONE BY THIS DEPARTMENT FOR YEAR 1914

Total number of permits issued.....	1,209
Total number of poles set.....	3,623
Total inspections made.....	4,911
Old installations ordered changed.....	119
New installations ordered changed.....	17
Transformers tested.....	456
Electrolytic surveys made.....	192
Number of poles removed, M. G. E. Co.....	668
Number of poles removed, N. W. Telephone Exchange Co.....	346
Number of poles removed, Tri-State Telephone Co.....	169

Overhead wires removed from Franklin avenue, from 10th avenue South to Cedar avenue, and from 20th avenue North, from 2nd street North to Dupont avenue.

TABLE No. 36  
EXTENSIONS AND ADDITIONS MADE TO ELECTRIC CONDUIT SYSTEM IN 1914

MINNEAPOLIS GENERAL ELECTRIC COMPANY			CONDUITS		DUCTS	
STREET	FROM	TO	Kind Duct	Length Lineal Feet	Number	Lineal Feet
Alley bet 8th and 9th st, Nicollet and Marquette av.	Conduit	Property line	Iron pipe	23	2	46
Alley bet 5th and 6th st, Nicollet and Hennepin av.	Manhole	Sub-station	Clay	216	48	10,368
Alley bet 32nd and 33rd st, Garfield and Franklin av.	Manhole	Manhole	Clay	42	4	168
4th st S bet 2nd and 3rd av.	Manhole	Pole	Iron pipe	74	3	222
4th st N at Bloomington	Hennepin av.	2nd av N.	Clay	412	8	3,296
4th st S bet 2nd and 3rd av.	Manhole	Curb	Iron pipe	52	3	156
4th st SE at 8th av.	Manhole	Manhole	Iron pipe	27	1	27
4th st SE bet 4th and 5th av.	For new manhole	Property line	Iron pipe	25	1	25
4th av S bet 5th and 6th st.	Manhole	Property line	Iron pipe	47	3	141
5th av N bet 2nd and 3rd av.	Manhole	Pole	Iron pipe	20	3	60
5th av N bet Washington and 3rd st.	Manhole	Property line	Iron pipe	68	2	136
5th av N bet 4th and 5th st.	Pole	Manhole	Iron pipe	107	1	107
Grand st at 25th av.	Manhole	Willow st.	Clay	371	8	2,968
Grant st W.	Vine pl.	Willow st.	Clay	257	2	514
Hennepin at 1st st.	Ornamental post	Safety isle	Iron pipe	69	1	69
Hennepin bet 4th and 5th st.	Manhole	Curb	Iron pipe	99	12	396
Hennepin bet 5th and 6th st.	Manhole	70 feet north	Clay	70	12	840
Hawthorn at 9th st.	Safety isle	Property line	Iron pipe	90	1	90
Hawthorn at 32nd st.	Manhole	Manhole	Fibre	181	4	724
Jackson bet Broadway and 12th av NE.	Property line	Property line	Iron pipe	25	1	25
Marquette av at 10th st.	Manhole	Property line	Iron pipe	45	3	135
Main at SE.	3rd av.	6th av.	Clay	1,270	28	35,560
9th at Hennepin av.	Property line	Ornamental post	Iron pipe	220	24	5,280
9th at bet Nicollet and Marquette.	Manhole	Property line	Iron pipe	31	4	124
Nicollet bet 7th and 8th st.	Manhole	Curb	Iron pipe	26	1	26
Nicollet bet 9th and 10th st.	Manhole	Property line	Iron pipe	60	3	180
			Iron pipe	61	3	183
			Iron pipe	128	3	384

Nicollet bet 10th and 11th st.	Manhole.	Curb.	Iron pipe.	40	3	120	..
6th st N bet 2nd and 3rd av.	Hennepin.	Curb. at av N	Clay	502	3	2,092	..
6th av SE at Main st.	Manhole.	Curb.	Iron pipe.	9	1	123	..
6th av SE at Main st.	Manhole.	Pole	Iron pipe.	73	3	173	..
6th av SE at River bridge.	Manhole.	Bridge	Iron pipe.	35	19	105	..
6th av SE.	Main st.	Division st.	Clay.	380	4	7,220	..
3rd av SE.	Main st.	Division st.	Clay.	2,156	6	8,624	..
				1,219	1	7,314	..
3rd av S at 10th st.	Manhole.	Curb.	Iron pipe.	12	1	34	..
3rd av S bet 10th and 11th st.	Manhole.	Curb.	Iron pipe.	34	1	848	..
3rd st S bet 5th and 6th av.	Manhole.	Manhole.	Clay.	106	3	117	..
			Iron pipe.	39	4	728	..
10th st S.	Hennepin av.	Harmon pl.	Clay.	182	3	336	..
10th av S at 4th st.	Manhole.	Poles.	Iron pipe.	112	1	49	..
13th av NE.	Main st.	Grand st.	Iron pipe.	49	5	195	..
			Fibre.	39	6	1,518	..
24th st E.	Stevens av.	300 ft east.	Clay.	253	4	1,188	..
			Iron pipe.	297	3	69	..
24th st bet Stevens and 3rd av.	Manhole.	Ornamental post.	Iron pipe.	23	2	52	..
32nd st E.	Hiawatha.	Alley bet Hiawatha & 24	Iron pipe.	26	1	140	..
			Fibre.	140	2	632	..
33rd st W bet Garfield and Harriet.	Manhole.	Manhole.	Clay.	316	48	960	..
Washington av N at 12th av.	Manhole.	Pole	Clay.	20	36	1,944	..
Washington av S bet 2nd and 3rd av.	Manhole.	Property line.	Iron pipe.	54	12	216	..
			Iron pipe.	18	1	51	..
			Iron pipe.	51	3	69	..
Total feet.				10,324		96,899	..
Total miles.				1.95		18.37	..
Total manholes.							20



TABLE No. —36Continued  
EXTENSIONS AND ADDITIONS MADE TO ELECTRIC CONDUIT SYSTEM IN 1914

NORTHWESTERN TELEPHONE COMPANY			CONDUITS		DUCTS		
STREET	FROM	TO	Kind Duct	Length Lineal Feet	Number	Lineal Feet	Number of Manholes
Alley bet 4th and 5th av, 6th and 7th st S Alley bet 4th and 5th st, Nicollet and Marquette Alley bet 5th and 6th st, Hennepin and 1st av N Alley bet 1st av N, 7th st, 9th st and Broadway st Broadway st Broadway st Bryant av N Cedar av Central av Clifton pl Collfax av bet Lincoln and Franklin Dell pl Elm st Emerson av Emerson av S 18th at E bet Park and Chicago 18th at bet 2nd and 3rd av S 1st av N at 4th st 4th at N 4th at N at 5th av	Manhole	Pole	Clay	98	1	98	1
	Manhole	Areaway	Iron pipe	18	1	18	1
	Property line	Areaway	Iron pipe	13	1	13	1
	Property line	Property line	Iron pipe	23	1	23	1
	5th st NE	Washington st	Clay	693	3	2,079	3
	Washington st	Jackson st	Clay	560	1	560	1
	42nd av	Washington av	Clay	1,999	4	7,996	4
	Minnehaha	22nd st	Clay	850	1	850	1
	Main st	East Island av	Clay	512	4	2,048	2
	Oak Grove st	Groveland av	Clay	64	1	64	1
	Manhole	Property line	Clay	1,453	4	5,812	3
	Lyndale av	Summit pl	Clay	383	1	383	1
	Laurel av	Logan av	Clay	531	3	1,593	2
	Douglas	22nd st	Clay	165	1	165	1
	22nd st	Lake st	Clay	213	4	852	1
	Manhole	Property line	Clay	69	1	69	1
	Manhole	Property line	Clay	204	3	612	2
	Manhole	Curb	Clay	1,370	8	10,960	4
	6th av	12th av	Clay	654	18	11,772	4
	Manhole	Pole	Clay	1,201	6	7,206	1
Manhole	Property line	Clay	1,285	8	10,280	1	
Manhole	Property line	Clay	1,323	10	13,230	8	
Manhole	Property line	Clay	631	15	9,465	8	
Manhole	Property line	Clay	61	1	61	1	
Manhole	Property line	Clay	30	1	30	1	
Manhole	Curb	Clay	30	1	30	1	
Manhole	12th av	Clay	2,723	4	10,892	5	
Manhole	Pole	Clay	127	1	127	1	
Manhole	Pole	Clay	54	1	54	1	

5th st bet Nicollet and Hennepin.....	Manhole.....	Property line.....	Iron pipe.....	42	22	84	2
14th av S bet Washington and 3rd st.....	Manhole.....	Property line.....	Clay.....	147	588	22	1
14th av SE bet University av and 4th st.....	Manhole.....	Manhole.....	{Cres. wood Iron pipe.....	147	294	147	4
W 40th st bet Lyndale and Garfield.....	Manhole.....	Pole.....	Clay.....	45	2596	45	2
42nd av N.....	Lyndale.....	Bryant.....	Clay.....	679	13	13	3
44th st at Bead av.....	Manhole.....	Property line.....	Clay.....	93	193	93	1
44th st bet Garfield and Harriet.....	Manhole.....	Pole.....	Clay.....	238	238	238	1
44th st at France av.....	Manhole.....	Pole.....	Clay.....	338	1352	338	4
48th st W.....	Pillsbury av.....	Pleasant av.....	Clay.....	158	158	158	4
49th st W.....	Pleasant av.....	Pleasant av.....	Clay.....	161	664	161	4
Hennepin.....	Douglas av.....	Lyndale av.....	Clay.....	666	2664	666	4
Hiawatha av.....	22nd st.....	Lake st.....	Clay.....	4,368	25,106	4,368	6
Humboldt av.....	Douglas av.....	Mount Curve av.....	Clay.....	390	2,340	390	6
Huron bet Hennepin and Lyndale av.....	For new Manhole.....	Lake pl.....	Clay.....	200	400	200	2
Irving av S.....	24th st.....	Erie st.....	Clay.....	87	87	87	1
Logan av.....	Elm st.....	Dell pl.....	Clay.....	538	1,614	538	3
Lyndale av.....	Franklin.....	Huron.....	Clay.....	22	2,792	22	4
Lyndale av.....	Hennepin.....	44th av N.....	Clay.....	252	1,512	252	6
Main st SE at Bank st.....	Manhole.....	Pole.....	Clay.....	787	3,148	787	4
Mary pl bet 10th and 11th st.....	Manhole.....	Property line.....	Clay.....	583	2,332	583	4
Monroe st.....	Manhole.....	19th av.....	Clay.....	42	42	42	1
Pleasant av.....	48th st.....	49th st.....	Clay.....	136	302	136	1
Pleasant av.....	49th st.....	Curb.....	Clay.....	302	199	302	1
7th st N bet Hennepin and 1st av N.....	Manhole.....	Franklin av.....	Clay.....	655	2,620	655	4
3rd av S.....	18th st.....	Property line.....	Iron pipe.....	61	61	61	1
3rd av S bet 22nd and 24th st.....	Pole.....	Property line.....	Clay.....	169	676	169	4
3rd av S at 24th st.....	Manhole.....	Property line.....	Clay.....	182	182	182	2
10th st bet Park and Chicago.....	Manhole.....	Property line.....	Fibre.....	33	5,502	33	1
10th st N, bet Western and 1st av.....	Manhole.....	Manhole.....	Clay.....	917	12	917	6
12th av N.....	4th st.....	Bryant av.....	Clay.....	26	51	26	1
22nd st E.....	Cedar av.....	Hiawatha av.....	Clay.....	158	316	158	2
22nd st W.....	Emerson.....	80 feet east.....	Clay.....	1,758	10,548	1,758	6
			Clay.....	599	599	599	1
			Clay.....	124	498	124	4
			Clay.....	90	3,600	90	40

TABLE No. 36—Continued  
EXTENSIONS AND ADDITIONS MADE TO ELECTRIC CONDUIT SYSTEM IN 1914

STREET	NORTHWESTERN TELEPHONE COMPANY		CONDUITS		DUCTS		
	FROM	TO	Kind Duct	Length Lineal Feet	Number	Lineal Feet	Number of Manholes
24th st W.....	Alley bet Humboldt and Irving.....	Irving av.....	Clay.....	194	2	388	1
26th st E.....	Hiawatha av.....	Bloomington av.....	Clay.....	2,329	4	9,316	6
32nd st W.....	Emerson av.....	Humboldt av.....	Clay.....	1,313	4	955	4
32nd st E.....	3rd av S.....	Portland av.....	Clay.....	1,726	4	5,252	4
34th st E bet 5th and Portland.....	Manhole.....	Pole.....	Clay.....	1,152	4	4,608	4
36th st E.....	Nicollet.....	2nd av S.....	Clay.....	762	1	50	4
38th st E bet Grand and Pleasant.....	Manhole.....	Pole.....	Clay.....	810	1	3,240	4
University av SE bet Harvard and Walnut.....	Manhole.....	Pole.....	Clay.....	674	4	674	4
University av SE at Walnut.....	Manhole.....	Pole.....	Clay.....	13	1	13	80
Waverly pl.....	Mount Curve av.....	Kenwood parkway.....	Clay.....	80	1	251	6
Western av bet 7th and 9th st.....	Manhole.....	Property line.....	Clay.....	997	6	5,982	3
Total feet.....				74	1	11	
Total miles.....					44,958	206,829	
Total manholes.....					8.51	38.17	82

TABLE No. 37  
EXTENSIONS AND ADDITIONS MADE TO ELECTRIC CONDUIT SYSTEM IN 1914

NORTH AMERICAN TELEGRAPH COMPANY			CONDUITS		DUCTS		
STREET	FROM	TO	Kind Duct	Length Lineal Feet	Number	Lineal Feet	Number of Manholes
Alley bet 4th and 5th st. 4th and 5th av S.	Property line	Property line	Iron pipe	20	1	20	.....
4th av S bet Washington and 3rd st.	Property line	Property line	Iron pipe	57	1	57	.....
5th av S bet Washington and 3rd st.	Property line	Property line	Iron pipe	80	1	80	.....
5th av S bet 4th and 5th st.	Property line	Property line	Iron pipe	94	1	94	.....
5th st S bet 4th and 5th av.	Property line	Property line	Iron pipe	80	1	80	.....
7th st N. bet 1st and 2nd av.	Property line	Property line	Iron pipe	60	1	60	.....
Total feet.....	.....	.....	.....	421	.....	421	.....
Total Miles.....	.....	.....	.....	.08	.....	.08	.....



TABLE No. 37—Continued  
EXTENSIONS AND ADDITIONS MADE TO ELECTRIC CONDUIT SYSTEM IN 1914

MUNICIPAL SUBWAY			CONDUITS		DUCTS		
STREET	FROM	TO	Kind Duct	Length Lineal Feet	Number	Lineal Feet	Number of Manholes
9th av SE.....	5th st.....	6th st.....	Iron pipe.....	396	1	396	.....
Total feet.....				396	.....	396	.....
Total miles.....				.03	.....	.03	.....

TABLE No. 37—Continued  
EXTENSIONS AND ADDITIONS MADE TO ELECTRIC CONDUIT SYSTEM IN 1914

TRI-STATE TELEPHONE COMPANY				CONDUITS		DUCTS	
STREET	FROM	TO	Kind Duct	Length Lineal Feet	Number	Lineal Feet	Number of Manholes
Alley bet 1st and Stevens av, Franklin and 19th st . . . . . Alley bet 4th and 5th st, 2nd and 3rd av S Alley bet Western and 1st av, 11th and 12th st N . . . . .	Property line	Pole	Clay . . . . .	96	1	96	1
	Manhole	Property line	Iron pipe . . . . .	33	1	33	1
	Property line	Property line	Clay . . . . .	300	2	600	2
	11th av	18th av	Clay . . . . .	818	4	3,272	4
Como av SE . . . . . 8th S bet 4th and 5th av S . . . . . 8th st S . . . . .	Property line	18th av	Clay . . . . .	1,347	2	2,694	2
	Conduit	Curb	Clay . . . . .	693	1	693	1
	5th av	9th av	Clay . . . . .	33	1	33	1
	14th av	23rd av	Clay . . . . .	1,449	2	2,898	2
Filmore st . . . . . Franklin av . . . . .	19th av	23rd av	Clay . . . . .	94	1	94	1
	19th av S	27th av S	Clay . . . . .	1,255	3	3,765	3
	Manhole	Property line	Clay . . . . .	84	4	84	4
	Conduit	Curb	Clay . . . . .	3,075	4	12,300	9
Franklin bet 1st and Stevens 1st av N bet 4th and 5th st . . . . . 1st av N at 7th st . . . . . 5th st S bet Hennepin and Nicollet . . . . . 14th av N bet Washington and 2nd st . . . . . Lake st bet 45th and 46th av . . . . . Minnehaha av . . . . .	Manhole	Property line	Clay . . . . .	657	1	657	1
	Conduit	Curb	Clay . . . . .	17	1	17	1
	Manhole	Curb	Clay . . . . .	4	1	4	1
	Manhole	Curb	Clay . . . . .	16	1	16	1
19th av at Franklin 2nd av S . . . . . 2nd st S bet 10th and 11th av . . . . . 6th av S bet 6th and 6th st . . . . . 7th av SE bet 7th and 8th st . . . . . 10th st at Park av . . . . . 23rd av S . . . . .	Manhole	Pole	Clay . . . . .	21	1	21	1
	Manhole	Property line	Clay . . . . .	190	1	190	1
	5th st	Franklin av	Clay . . . . .	91	1	91	1
	19th av at Franklin	6th st	Clay . . . . .	573	4	2,292	8
2nd st S bet 10th and 11th av . . . . . 6th av S bet 6th and 6th st . . . . . 7th av SE bet 7th and 8th st . . . . . 10th st at Park av . . . . . 23rd av S . . . . .	Manhole	Property line	Clay . . . . .	8	1	8	1
	Conduit	Property line	Clay . . . . .	75	1	75	1
	Manhole	Pole	Clay . . . . .	350	4	1,400	4
	Manhole	Property line	Clay . . . . .	167	1	167	1
10th st at Park av . . . . . 23rd av S . . . . .	Manhole	Property line	Clay . . . . .	188	1	188	1
	Manhole	Pole	Clay . . . . .	23	1	23	1
	Manhole	Curb	Clay . . . . .	171	1	171	1
	35th st	39th st	Clay . . . . .	86	1	86	1
				2,625	4	10,500	8
				35	2	70	2

	Manhole.	Curb.	38	1	38
24th st bet 5th and Portland	Franklin.	Clay.	181	1	724
26th av S.	Alley bet Franklin & 22.	Clay.	135	1	135
		Clay.	2,080	4	8,340
30th av N.	Lyndale.		792	1	792
30th av N.	Washington.	4th st.	97	—	—
38th st E.	23rd av.	Clay.	104	1	416
		Clay.	104	4	416
Total feet.			17,869		52,943
Total miles.			3 32		10 03
Total manholes.					39



TABLE No. 37—Continued  
EXTENSIONS AND ADDITIONS MADE TO ELECTRIC CONDUIT SYSTEM IN 1914

TWIN CITY RAPID TRANSIT COMPANY			CONDUITS		DUCTS		
STREET	FROM	TO	Kind Duct	Length Lineal Feet	Number	Lineal Feet	Number of Manholes
Como av at 10th av SE.	Manhole.	Pole.	Fibre.	126	2	252	1
Como av.	10th av SE.	15th av SE.	Fibre.	1,853	4	7,412	1
Chicago av at 14th st.	Manhole.	Pole.	Fibre.	37	3	111	1
Chicago av at Franklin.	Manhole.	Pole.	Fibre.	37	3	111	1
Chicago av at 29th st.	Manhole.	Manhole.	Fibre.	180	9	1,620	2
1st av N.	6th st.	7th st.	Fibre.	501	4	2,004	
5th st S.	Property line.	Switch.	Fibre.	84	1	84	
Hawthorn at 11th st.	Manhole.	Pole.	Fibre.	47	1	47	
Hennepin av at Kenwood parkway.	Manhole.	Pole.	Fibre.	27	1	27	
Hennepin at Lyndale av.	Curb.	Switch.	Fibre.	27	1	27	
Marquette av at 4th st.	Manhole.	Manhole.	Fibre.	18	1	18	
Nicollet av at 29th st.	33rd st.	38th st.	Fibre.	174	3	522	2
Nicollet av.	4th st.	7th st.	Fibre.	3,500	4	14,000	7
2nd av SE.	Central.	2nd av SE.	Fibre.	1,225	6	7,350	3
7th st SE.	Washington av.	3rd st.	Fibre.	470	1	2,820	
20th av N at Emerson.	Manhole.	Switch.	Fibre.	24	1	24	
26th av N.	Manhole.	Switch.	Fibre.	368	4	1,472	2
27th av S at 25th st.	Manhole.	Pole.	Fibre.	59	3	177	
University av at 11th av SE.	For new manholes.						2
Total feet.				8,777		38,138	
Total miles.				1.66		7.23	
Total manholes.							20

TABLE No. 38  
SUMMARY OF UNDERGROUND ELECTRIC CONDUITS CONSTRUCTED PRIOR TO JANUARY 1, 1915—KIND OF DUCTS USED

	Clay, Vitrified Including All Makes		Fibre, Either of Treated Paper or Pulp		Iron and Steel Pipe, Including Sheet-Iron Pipe Lined With Cement		Wood: W. C. Wood Treated; is Untreated		Asphalt As D. Dorsett	
	Conduit	Duct	Conduit	Duct	Conduit	Duct	Conduit	Duct	Conduit	Duct
Miscellaneous companies.....	710	2,696			1,574	1,574				
Minneapolis General Electric Co. ....	153,086	1,218,533		79,873	110,631	291,432		4,375	39,702	340,134
Municipal subway.....	87	1,076	20,227		17,081	20,957	1,294			
North American Telephone Co. ....	8,379	16,088			73,784	101,441				
North Western Telephone Co. ....	462,379	2,432,448	8,180	72,019	73,784	101,441	1,036	5,628		
Tri-State Telephone Co. ....	278,171	1,163,419	30,159	93,722	45,080	78,823				
Twin City Rapid Transit Co. ....	124,117	774,411	86,631	620,115	40,283	92,159	W.C. 21,327	376,424		
Western Union Telegraph Co. ....	610	1,220			33,379	66,520				
Total lineal feet.....	1,032,921	5,613,178	148,197	865,729	342,491	658,593	23,657	386,427	39,702	340,134
Total miles.....	195.62	1,063.14	28.07	163.96	64.86	124.72	4.48	73.11	7.32	64.42
Grand total miles of conduit.....										
Grand total miles of duct.....										

Grand total miles of conduit..... 300.55  
Grand total miles of duct..... 1,489.35



TABLE No. 40

GENERAL SUMMARY BY COMPANIES OF CONDUITS CONSTRUCTED PRIOR  
TO JANUARY 1, 1915

COMPANIES	Conduit		Duct	
	Feet	Miles	Feet	Miles
Miscellaneous companies.....	2,284	.43	4,270	.80
Minneapolis General Electric Company...	324,812	61.52	1,934,647	366.41
Municipal subway.....	17,809	3.37	21,443	4.06
North American Telegraph Co.....	7,560	1.43	17,860	3.38
Northwestern Telephone Co.....	553,246	104.78	2,616,739	495.59
Tri-State Telephone Co.....	373,453	70.73	1,338,223	253.45
Twin City Rapid Transit Co.....	274,358	51.96	1,863,139	352.86
Western Union Telegraph Co.....	33,989	6.43	67,740	12.81
Totals.....	1,583,511	299.83	7,854,061	1,487.51

\*"Dorsett"—10,197 feet of conduit owned by Minneapolis General Electric Co. and used by Municipal Subway.

†"Dorsett"—9,993 feet of conduit or 10,814 feet of duct, leased by the North American Telegraph Co.

‡"Cement Lined Pipe"—9,961 feet of conduit or 33,291 feet of duct is included under "iron pipe."

"Edison Wire Tube"—29,659 feet of conduit or 58,006 feet of duct, is included under "iron pipe."

†"Cement Lined Pipe"—35,234 feet of conduit or 72,504 feet of duct is included under "iron pipe" and which was formerly listed under St. Anthony Falls Water Power Co.

\*\*\*"Miscellaneous Companies" includes such as were formerly listed under "American District Telegraph Co.," "Mutual Building Co.," "North Star Woolen Mill Co.," usually having short runs and generally this heading "Miscellaneous Companies" will include any work not extensive enough to demand a separate heading.

††"Minneapolis General Electric Company" includes besides the work actually done by the company, such work as the "Dorsett" and "Edison Wire Tube" also the runs of the old Minnesota Brush Co. and the Minneapolis International Electric Company.

‡‡"Municipal Subway" includes chiefly work done by the Minneapolis Fire Department.

‡‡"Tri-State Telephone Company" includes all the work done by the original company, "Mississippi Valley Telephone Co.," and its successor, "the Twin City Telephone Co."

\*\*\*\*"Twin City Rapid Transit Co." includes the work of the Minneapolis Street Railway Co. and the St. Anthony Falls Water Power Co.

Underground electric conduit practice in Minneapolis is about as follows: Operating under the City Ordinances and Regulations, the private companies furnish and install the complete system.

The kinds of conduits most in use are Vitrified Clay, Fibre and Iron Pipe, Vitrified Clay, formerly varying widely in the different makes, has become more or less standardized and not very much attention as paid to "make" where all are good. Different makes are used, sometimes, on the same run according to which kind of conduit is on hand.

Clay conduit is laid in concrete, some practice placing concrete on bottom and top, with laps of concrete over the side joints of the conduit; other practice requires a complete surrounding of the conduit with concrete from end to end of run. Burlap is usually laid over the joints before the concrete is put on.

Fibre conduit is made in two ways at least, one being the wrapping of thick paper around a mandril, and the other being the pressing of pulp into place. Both kinds are treated with an Asphalt or Tar material. The fibre conduit is round, comes in single ducts, is bedded in concrete, which is also poured between the ducts of the conduit, and concrete is placed above.

Iron, or rather steel, pipe is much used. It is screwed together, and is laid without protection of concrete.

Cresosoted wood is little used, chiefly in damp situations.

Manholes are made either of brick or concrete, and covered with brick or concrete held up by steel beams, etc.



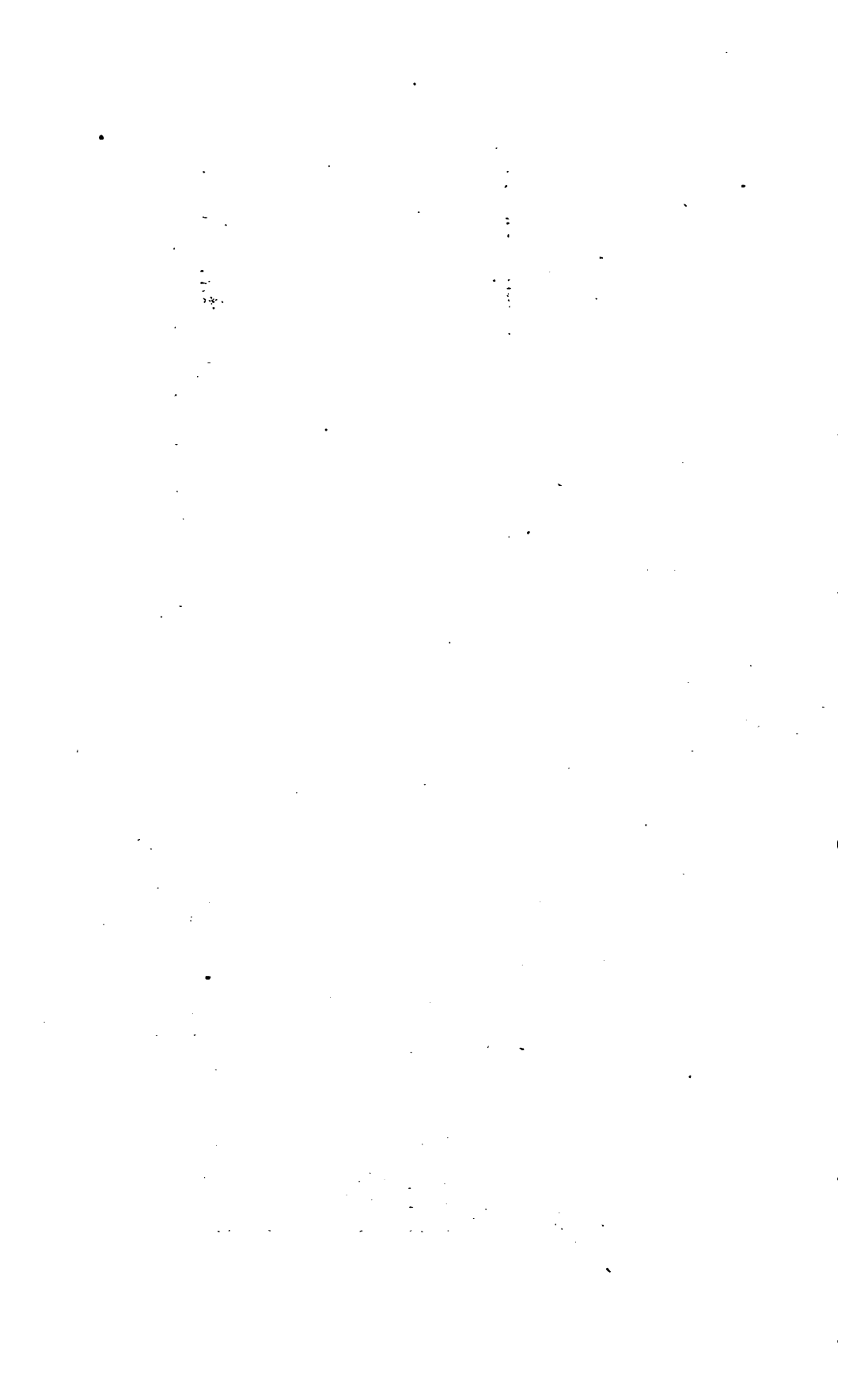
## CITY OF MINNEAPOLIS

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TABLE NO. 42  
SPECIAL ASSESSMENTS

	Tax of 1913			Rebate of Tax of 1913 and Previous Years				Tax of 1913		
	Amount of Assessment	No. of Descriptions	No. of Rolls	Amount of Annulments	No. of Certificates	No. of Refundments	Total	Amount of Certificates	Total	No. of Descriptions
Paving.....	\$291,415.83	1,550	47	\$7,063.83	97	15	112	\$7,001.31	\$7,063.83	57
Paving additional.....	8,624.95	402	22	.....	.....	.....	.....	.....	.....	15
Paving repair.....	312.75	1	1	.....	.....	.....	.....	.....	.....	480
Sewer.....	348,401.96	5,299	125	12,624.05	299	3	344	12,130.44	12,655.14	100
Sewer additional.....	2,795.55	242	8	.....	.....	.....	.....	.....	.....	3
Water mains.....	103,587.31	3,090	114	121.56	3	2	9	89.88	1,017.45	136
Curb.....	138,047.69	6,643	170	2,445.55	213	11	224	2,390.44	141.46	136
Curb repairs.....	1,133.62	158	7	.....	.....	.....	.....	.....	.....	3,418
Curb additional.....	33.77	158	7	.....	.....	.....	.....	.....	.....	175
Sidewalk.....	148,373.65	5,604	270	59,731.06	722	98	820	537,849.75	41,916.31	277
Sidewalk repairs.....	8,384.95	1,428	13	.....	.....	.....	.....	.....	.....	5,410
Sprinkling.....	217,179.52	66,383	696	219.90	76	76	843	219.90	63,443.89	13
Sewer and water house conn.....	7,567.83	127	10	5,648.02	65	128	875	5,782.93	234,301.52	740
Rubbish removal.....	17.83	5	1	144.50	2	.....	2	144.50	7,559.94	8
Street opening.....	19,113.80	4,717	19	35.77	.....	2	2	.....	106.13	3
Street acquisition and improvement (Elwell law).....	.....	.....	.....	.....	.....	.....	.....	.....	4,984.40	6
Reassessment.....	1,886.91	98	42	.....	.....	.....	.....	.....	375,282.25	28
Paving.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8
Paving additional.....	.....	.....	.....	.....	.....	.....	.....	.....	122.33	3
Sewers.....	.....	.....	.....	.....	.....	.....	.....	.....	4.35	4
Sewer additional.....	.....	.....	.....	.....	.....	.....	.....	.....	163.27	6
Curb.....	.....	.....	.....	.....	.....	.....	.....	.....	1.32	1
Curb additional.....	.....	.....	.....	.....	.....	.....	.....	.....	12.49	1
Water main.....	.....	.....	.....	.....	.....	.....	.....	.....	106.78	7
Sidewalk.....	.....	.....	.....	.....	.....	.....	.....	.....	31.08	1
Sidewalk repair.....	.....	.....	.....	.....	.....	.....	.....	.....	180.08	1
Sprinkling.....	.....	.....	.....	.....	.....	.....	.....	.....	143.79	9
Sewer and water house conn.....	.....	.....	.....	.....	.....	.....	.....	.....	89.03	7
Total.....	\$1,206,994.31	95,923	1,553	\$88,034.24	2,818	381	3,109	\$127,285.81	\$8,940.46	1,627
									\$1,591,615.41	97,561

A—Annulled. B—Built by owner. F—Excess.



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**ANNUAL REPORT**

**OF THE**

**CITY ENGINEER**

**OF THE**

**CITY OF MINNEAPOLIS**

**FOR THE**

**YEAR ENDING DECEMBER 31, 1915**

---

**F. W. CAPPELEN, City Engineer**

**SYNDICATE PRINTING COMPANY  
MINNEAPOLIS, MINN.**

**1918**



Minneapolis, Minn., January 29, 1915.

*The Honorable City Council.*

Gentlemen: I herewith submit the annual report of the work done under my direction for the year ending December 31st, 1915.

Respectfully submitted,

F. W. CAPPELEN,  
*City Engineer.*

**SEWER DEPARTMENT.**

During the year 1915, 19.186 miles of sewers were built, at a total cost of \$495,672.69, making a total mileage of sewers and drains of 389.105 and 6.090 miles of tunnels—at a total cost of \$10,338,928.15.

There are 37,118 sewer connections, and 9,209 catch basins, and the total cost of cleaning and maintaining the entire sewer system for the year 1915, was \$44,772.21.

During November and December five drill holes were sunk in Nicollet avenue in the vicinity of 7th, 8th and 9th streets to determine the location of the underlying blue lime rock and the sand rock below, said information being desired to determine the proper location for the construction of relief sewer tunnels on Nicollet avenue.

The average depth to top of lime rock, was 42 feet; and the thickness of the lime rock was 22 feet, then the sand rock.

The proposed relief work was then determined, as follows:

On Nicollet avenue from 4th street to Washington avenue; Nicollet avenue from 7th street to 9th street; Hennepin avenue from 4th street to 9th street; and 2nd avenue south from 4th street to 9th street.

One drill hole was also put down at 10th avenue south and 6th street for relief tunnel on 6th avenue south between 4th street and 6th street. All this relief work will begin in January, 1916.



New Sewer Warehouse and Material Yard.



New Sewer Warehouse, Garage and Machine Shop.



New Sewer Yard, Excavating Machinery.

**PAVING DEPARTMENT.**

During the year 1915, the following different kinds of new pavement were laid:

Asphaltic Concrete .....	41,712 yards
Brick .....	3,732 yards
Creosoted wood .....	135,214 yards
Concrete .....	44,165 yards
Granite on Sand .....	10,414 yards
Sandstone .....	719 yards

Total ..... 235,956 yards

At a total cost of \$443,195.00.

Of this amount, 76,404 yards, at a cost of \$166,975.00 were laid under the Elwell Law; and 159,552 yards, at a cost of \$276,220.00 were laid under the old 5-year law.

Included in the above total yardage was the resurfacing of an old macadam street 12,978 yards of asphaltic concrete, Topeka specifications, at a cost of 67 cents per yard; 2,489 yards of surfacing old sandstone pavements under Topeka specifications, at a cost of 83 cents per square yard; 7,062 yards of surfacing old brick pavements under Topeka specifications at 72 cents per yard; and 3,479 yards of new asphaltic concrete under Topeka specifications, on a 5-inches of concrete foundation, at a cost of from \$1.43 to \$1.50 per square yard.

The greatest amount of paving laid was creosoted wood block, which is still a favorite of the people, and the same specifications are used as previously.

As the City of Minneapolis now has its own asphalt plant, a deal was consummated, upon advice of the City Attorney and the City Engineer, by which the City of Minneapolis relieved the Barber Asphalt Company of its maintenance contract, entered into in the year 1906 and expiring in 1916, the company paying to the City of Minneapolis \$22,000.00 in cash and 200 tons of Trinidad Asphalt refined.

This arrangement made it possible for the city to attend to the repairing of the asphalt streets and keep these streets in proper condition, and avoiding all the troubles and nuisance we heretofore had on account of negligence by said Barber Asphalt Company in maintaining the streets. It is one of the best things in the paving line done by the city.

The Hawthorne avenue paving department warehouse was completed during the year at a cost of \$8,010.00 which was the amount of the appropriation.

The total amount paid for all paving repairs during the year was \$25,484.00.

**EXPERIMENTAL PAVING.**

A block of experimental creosoted wood paving was laid in 1906 on Nicollet avenue between Washington avenue and 2nd street. This was laid by the City of Minneapolis in conjunction with the Forest Service, United States Department of Agriculture.

There was laid in the block, seven different kinds of wood, viz: Norway Pine, Tamarac, White Birch, Western Larch, Douglas Fir, *Long Leaf* Pine and Eastern Hemlock.

The Douglas Fir was removed in 1911, and a shorter section of a better quality of fir was substituted; the remainder of the section being laid with Long Leaf Pine.

The blocks were all treated with 16 pounds of preservative, and are subject to the same travel. From traffic census taken for several years, it appears that the average tons per foot of roadway, total, is about 150; or on the middle 25-feet, about 250 tons per foot.

Inspection of the pavement was started after the 5th year of wear, and was made by representatives of the Forest Service, City Engineer of Minneapolis, and the creosoting companies interested. From such inspection, the various woods may be classified as to their efficiency of service, as follows:

- First—Long Leaf Pine.
- Second—White Birch.
- Third—Eastern Hemlock, Tamarac.
- Fourth—Norway Pine.
- Fifth—Western Larch.
- Sixth—Douglas Fir.

#### GRADING UNDER ELWELL LAW.

Fifty different streets were graded. A total of 418,679 cubic yards of earth was removed at a cost of \$132,493.50. The average haul was 970 feet.

This work was handled by sixteen crews, of which, three were steam shovel crews; three were elevating grader crews; three wheeled scraper crews; and the balance of these crews used wagons.

The average cost of handling the material on steam shovel work was 29.2 cents. The average cost of elevating grader work was 30.9 cents. The average cost on wagons was 33.4 cents; and the average cost of wheeled scraper work, was, per cubic yard per 100-foot haul, 9.7 cents.

#### SPECIAL STREET IMPROVEMENTS.

Two big projects were started during the year. The opening of North 7th street involves the widening of 7th street north from Hennepin avenue to Hoag avenue from 60 feet to 80 feet in width for a distance of 2,880 feet; and the opening and continuation of 7th street north from Hoag avenue to Plymouth avenue, a distance of 4,350 feet; also 80 feet in width; giving a splendid new thoroughfare from Hennepin avenue to Plymouth avenue, opening up a vast territory with direct connection to the shopping district of the city. The estimated cost of this improvement is \$567,400.00.

The other big improvement was the opening of a new street 80 feet in width, from Central avenue between 5th and 6th streets S. E., to the old Division street, a distance of 1,750 feet; and the widening of Division street from this point to the East City Limits, a distance of 9,900 feet, from the original width of 66 feet, to 80 feet. The cost of this improvement is estimated at \$296,705.00. The name of this street was changed to East Hennepin avenue, from the steel arch bridge to the city limits.

Both of these improvements were started under the Elwell Law, the city paying one-third of the cost of the total improvement, the property owners paying two-thirds.

On February 26th, the following very important report from your Standing Committee on Street Grades and Additions, was adopted, to-wit:

"That in the opinion of your committee, it is for the best interest of this city and all concerned, that the streets and alleys indicated in any proposed plat, should be graded," and it was further ordered that before the acceptance of any plat, all the streets, alleys and public places should be graded to lines and grades on file in the office of the City Engineer, and to his satisfaction and approval. This order has been carried out, and I am sure that the advantages of the carrying out of this policy will be very great, particularly to the investor in real property.

#### OILING STREETS.

Sprinkling of dirt and macadam streets with oil is growing rapidly in favor, particularly as a dust laying proposition.

The oil not also lays the dust, but also improves the roadbed wonderfully for ordinary travel.

Nine hundred and ten thousand, six hundred and forty eight (910,648) gallons were used, at a price per gallon of a little over 2.9 cents.

The accompanying table shows cost in detail in the various wards, which is of interest.

During the months of November and December our weather conditions were very bad. We had continuously freezing and thawing weather, and it was necessary to use calcium chloride to lay the dust and to prevent slipping. We use 331,240 pounds of calcium chloride, at a cost of \$12.00 per ton. To apply the chloride we spent \$1,196.00; or a total amount of \$3,213.44 was spent for this work. For this amount we treated 3,559,250 square yards; or the cost per square yard for chloride was 0.0567 cents; and for labor 0.0336 cents, or a total cost of 0.0903 cents per square yard.





## CITY ENGINEER'S REPORT

## SECOND WARD OIL SPRINKLING—1915

STREET	FROM	TO	Kind	Frontage	Length	Width	Sq. Yds.	No. Applications
Arthur av.	Malcolm av.	University av.	Dirt	3,804	2,000	24	5,320	2
Bedford av.	4th st SE	Hamline av.	Dirt	3,256	1,910	24	5,940	2
Elm st.	In front of	Webach Screen	Dirt	1,000	1,000	28	1,780	3
8th st SE	Central av.	10th av SE	Dirt	9,472	3,680	16	8,180	2
8th st SE	10th av SE	15th av SE	Dirt		1,840	36	7,360	3
18th av SE	University av.	5th st SE	Dirt	1,320	1,820	20	2,370	2
4th av SE	University av.	2nd st SE	Dirt	660	410	20	1,180	1
4th st SE	15th av SE	Oak st.	Dirt	3,080	2,060	20	4,580	3
5th av SE	8th st SE	R. R. tracks	Macad.	5,940	3,630	28	2,330	2
5th st SE	8th av SE	15th av SE	Dirt	1,180	1,080	20	2,420	1
Fulton st.	Oak st.	Eric st.	Dirt	1,395	1,080	28	2,120	2
Hamline st.	Bedford av.	Warwick st.	Dirt	679	410	28	1,280	2
Hamline av.	R. R. tracks	Thornton av.	Dirt	2,997	2,200	26	5,530	3
Harvard av.	University av.	River Road	Dirt	2,800	1,510	20	4,360	2
Huron st.	Fulton st.	R. R. Tracks	Dirt	245	200	40	890	3
Marshall st.	Oak st.	Seymour av.	Dirt	1,934	1,050	24	2,800	3
Melbourne av.	Orlin st.	5th av SE	Dirt	1,304	940	36	3,760	2
9th st SE	3rd av SE	Fulton st.	Dirt	3,859	2,020	24	6,360	2
Oak st.	4th st SE	River Road	Dirt		360	39	1,690	2
Oak st.	Fulton st.	To lots 8 and 9	Dirt	1,946	1,100	24	2,930	3
Orlin av.	Bedford av.	Lots 7-8-9	Dirt	198	200	15	330	3
2nd st SE	In front of	R. R. Tracks	Dirt	2,270	1,770	28	6,510	2
6th av SE	Central av.	5th av SE	Macad.	10,630	1,730	28	6,380	2
7th st SE	Central av.	17th av SE	Macad.		5,180	28	16,120	3
7th st SE	5th av SE	27th av SE	Dirt	7,698	5,720	30	19,070	2
Talmadge av.	10th av SE	8th st SE	Macad.	4,093	2,000	28	6,220	2
10th av SE	University av.	9th st SE	Dirt		400	16	710	2
10th st SE	Como av.	Division st.	Dirt	2,381	1,320	22	3,260	2
13th av SE	University av.	4th st SE	Dirt	624	410	36	1,040	3
26th av SE	University av.	Dartmouth av.	Dirt	4,497	1,560	36	6,240	3
27th av SE	Dartmouth st.	River Road	Dirt		1,160	20	2,620	3
27th av SE	Square at East	End of bridge	Dirt				200	3
Union st.	Washington av.	R. R.	Dirt	529	900	36	2,400	1
Totals.				81,061	51,890		164,200	
Total Sq. yds. Dirt.			No. of Gallons Macadam				10,900	
Sq. yds. all applications Dirt.	115,190		Labor Cost.				\$320.75	
Total Sq. yds. Macadam.	268,380		Oil Cost.				1,768.77	
Sq. yds. all applications Macadam.	39,010		Coal & Miscel.				61.76	
No. of Gallons Dirt	49,750		Demurrage.				16.00	

## THIRD WARD OIL SPRINKLING—1915

STREET	FROM	TO	Kind	Frontage	Length	Width	Sq. Yds.	No. Applications
8th av N.	Penn av.	Russell av.	Dirt	1,142	680	28	2,120	2
18th av N.	Girard av.	James av.	Dirt	1,480	920	28	1,990	2
14th av N.	Washington av.	1st st.	Dirt	990	680	28	2,120	3
James av N.	Plymouth av.	Crystal Lake av.	Dirt	3,627	2,800	28	8,710	2
9th av N.	Girard av.	Penn av.	Dirt	3,805	2,800	22	9,960	3
Queen av N.	10th av.	10th av.	Dirt	2,394	1,310	24	3,990	2
2nd st N.	Plymouth av.	Plymouth av.	Dirt	1,968	1,390	48	6,290	3
3rd st N.	7th av.	Plymouth av.	Dirt	4,193	1,340	28	10,300	3
10th av N.	3rd st.	5th st.	Dirt	1,280	770	38	3,250	3
10th av N.	4th st.	5th st.	Dirt	640	340	36	1,990	3
12th av N.	Washington av.	Humboldt av.	Dirt	7,056	2,540	28	14,290	3
21st av N.	Lyndale av.	Emerson av.	Dirt	2,512	1,500	16	4,670	3
26th av N.	Emerson av.	Penn av.	Dirt	2,983	3,580	16	6,370	3
Elwood av.	6th av.	10th av.	Macad.	2,530	1,550	28	4,820	2
8th av N.	Humboldt av.	Penn av.	Macad.	4,107	2,400	28	7,470	2
11th av N.	Irving av.	Knox av.	Macad.	588	400	28	1,240	2
Irving av N.	Elwood av.	Plymouth av.	Macad.	3,361	700	28	6,180	2
James av N.	6th av.	Elwood av.	Macad.	483	1,500	24	2,180	2
James av N.	10th av.	Plymouth av.	Macad.	1,639	700	28	4,450	2
Knox av N.	10th av.	Plymouth av.	Macad.	2,494	1,340	28	4,170	2
Morgan av N.	6th av.	Plymouth av.	Macad.	4,558	2,590	24	6,910	2
Morgan av N.	6th av.	Plymouth av.	Macad.	4,674	2,590	24	6,910	2
Newton av N.	6th av.	Plymouth av.	Macad.	4,686	2,590	24	6,910	2
Oliver av N.	6th av.	Plymouth av.	Macad.	4,488	2,590	28	8,060	2
Penn av N.	6th av.	Plymouth av.	Macad.	1,008	590	24	1,570	2
Queen av N.	10th av.	12th av.	Macad.	1,947	1,310	28	4,080	2
Sheridan av N.	10th av.	Plymouth av.	Macad.	180	200	28	620	2
7th av N.	Humboldt av.	Elwood av.	Macad.	1,943	1,380	28	4,290	2
Thomas av N.	10th av.	Plymouth av.	Macad.	1,056	540	20	1,200	2
Thomas Place.	Elwood Av.	Logan av.	Macad.	3,105	660	32	6,490	2
10th av N.	Irving av.	Penn av.	Macad.	1,330	660	32	6,490	2
12th av N.	Knox av.	Thomas av.	Macad.	4,354	1,330	28	7,750	2
Totals				85,759	51,090		166,700	
Total sq. yds. Dirt.	74,490		Labor Cost.				\$782.08	
Sq. yds. all applications Dirt.	207,470		Oil Cost.				1,630.80	
Total sq. yds. Macadam.	92,210		Demurrage.				13.00	
No. of Gallons Dirt.	32,487		Coal				36.28	
No. of Gallons Macadam.	23,575							

## FOURTH WARD OIL SPRINKLING LINES

STREET	FROM	TO	Kind	Footage	Length	Width	Oil Vols	No. Sprinkling Hoses
Cedar Lake Road.....	Superior av	Penn av	100	3,248	2,140	16	3,800	3
Franklin av.....	DuPont av	Lyons av	100	3,831	2,800	24	1,070	3
Superior av.....	Lyons av	City limits	100	6,843	6,800	16	17,700	3
Totals.....				13,922	11,740		22,570	9
No. of Gallons.....	11,030		Oil Cost				\$84.85	
Labour Cost.....	\$158.00		Demurrage				25.00	

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## SIXTH WARD OIL SPRINKLING—1915

STREET	FROM	TO	Kind	Frontage	Length	Width	Sq. Yds.	No. Applications
4th st S.....	Riverside av.....	22nd av.....	Dirt	1,908	1,350	36	5,400	1
5th st S.....	16th av.....	22nd av.....	Dirt	3,503	1,760	32	6,260	1
15th av S.....	Washington av.....	4th st.....	Dirt	1,320	330	46	3,010	2
19th av S.....	4th st.....	7th st.....	Dirt	1,779	1,230	36	4,920	1
6th st S.....	16th av.....	27th av.....	Dirt	6,428	3,780	36	15,120	2
7th st S.....	Cedar av.....	20th av.....	Dirt	1,320	710	28	2,210	1
16th av S.....	4th st.....	7th st.....	Dirt	1,880	1,220	36	4,880	1
17th av S.....	5th st.....	7th st.....	Dirt	1,780	900	32	3,200	1
3rd st S.....	21st av.....	22nd av.....	Dirt	660	480	32	1,710	1
20th av S.....	4th st.....	7th st.....	Dirt	1,920	1,230	28	3,830	1
21st av S.....	Washington av.....	7th st.....	Dirt	3,719	2,370	36	9,480	2
Locust St.....	22nd av.....	Bjornson av.....	Dirt	538	280	28	870	1
22nd av S.....	4th st.....	7th st.....	Dirt	1,814	1,230	28	3,830	1
23rd av S.....	6th st.....	7th st.....	Dirt	498	390	28	1,210	1
24th av S.....	6th st.....	7th st.....	Dirt	569	440	36	1,760	1
25th av S.....	6th st.....	7th st.....	Dirt	461	390	28	1,210	1
26th av S.....	6th st.....	7th st.....	Dirt	370	350	32	1,240	1
27th av S.....	6th st.....	7th st.....	Dirt	155	310	36	1,240	1
Totals.....				30,624	19,080		71,380	
Total sq. yds.....	71,380							
Sq. yds. all applications.....	98,990							
No. of Gallons.....	25,434							
			Labor Cost.....				\$103.80	
			Oil Cost.....				743.51	
			Demurrage.....				17.00	

## SECOND WARD OIL SPRINKLING—1915

STREET	FROM	TO	Kind	Frontage	Length	Width	Sq. Yds.	No. Applications
Arthur av.	Malcolm av.	University av.	Dirt	3,804	2,000	24	5,320	2
Bedford av.	4th st SE.	Hamline av.	Dirt	3,256	1,910	28	5,040	2
Elm st.	In front of	Wabash Screen	Dirt	1,000	1,000	16	1,760	2
8th st SE.	Central av.	10th av SE.	Dirt	9,472	3,680	20	8,180	2
8th st SE.	10th av SE.	15th av SE.	Dirt		1,840	36	7,960	2
18th av SE.	University av.	5th st SE.	Dirt	1,320	1,820	26	2,370	2
4th av SE.	University av.	2nd st SE.	Dirt	660	410	26	1,180	2
4th st SE.	15th av SE.	Oak st.	Dirt	3,080	2,060	20	4,580	3
5th av SE.	8th st SE.	R. R. tracks	Dirt	1,280	750	28	3,530	1
5th st SE.	8th av SE.	15th av SE.	Macad.	5,940	3,630	28	11,240	2
Fulton st.	Oak st.	Erie st.	Dirt	1,180	1,080	20	2,420	1
Hamline av.	Bedford av.	Warwick st.	Dirt	1,395	1,680	28	2,120	2
Harvard av.	R. R. tracks	Thornton av.	Dirt	679	410	28	1,280	2
Huron st.	University av.	River Road	Dirt	2,997	2,260	26	6,530	3
Marshall st.	Fulton st.	River Road	Dirt	2,800	1,510	26	4,360	2
Melbourne av.	Oak st.	R. R. Tracks	Dirt	245	200	40	890	3
9th st SE.	Orlin st.	Seymour av.	Dirt	1,934	1,050	24	2,800	3
Oak st.	3rd av SE.	5th av SE.	Dirt	1,304	940	36	3,760	2
Oak st.	4th st SE.	Fulton st.	Dirt	3,859	2,020	24	5,390	2
Orlin av.	Fulton st.	River Road	Dirt		380	39	1,690	2
2nd st SE.	Bedford av.	To lots 8 and 9.	Dirt	1,946	1,100	24	2,930	2
6th av SE.	In front of	Lots 7-8-9.	Dirt	198	200	15	330	2
7th st SE.	5th st SE.	R. R. Tracks	Dirt	2,270	1,770	28	5,510	3
7th st SE.	Central av.	5th av SE.	Macad.	10,630	1,730	28	5,380	1
Talmadge av.	10th av SE.	17th av SE.	Macad.	7,698	5,180	28	16,120	3
10th av SE.	University av.	27th av SE.	Dirt	4,093	5,730	30	19,070	2
13th av SE.	8th st SE.	9th st SE.	Macad.		2,000	28	6,220	2
13th av SE.	Como av.	Division st.	Dirt	2,381	400	16	710	2
26th av SE.	University av.	4th st SE.	Dirt	624	1,330	22	3,250	3
27th av SE.	Dartmouth st.	Dartmouth av.	Dirt	4,497	410	36	1,640	2
27th av SE.	Square at East.	River Road	Dirt		1,560	36	6,240	3
Union st.	Washington av.	End of bridge.	Dirt		1,180	20	2,620	3
Totals		R. R.	Dirt	529	600	36	2,400	1
				81,051	51,830		154,200	

Total Sq. yds. Dirt.....	115,190	No. of Gallons Macadam.....	10,900
Sq. yds. all applications Dirt.....	263,380	Labor Cost.....	\$320.75
Total Sq. yds. Macadam.....	35,010	Oil Cost.....	1,788.27
Sq. yds. all applications Macadam.....	77,470	Coal & Miscel.....	51.75
No. of Gallons Dirt.....	49,750	Demurrage.....	15.00

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## THIRD WARD OIL SPRINKLING—1915

STREET	FROM	TO	Kind	Frontage	Length	Width	Sq. Yds.	No. Applications
8th av N.	Penn av.	Russell av.	Dirt	1,142	680	28	2,120	2
18th av N.	Girard av.	James av.	Dirt	1,480	920	28	1,590	2
14th av N.	Washington av.	1st st.	Dirt	980	680	28	2,120	2
James av N.	Plymouth av.	Crystal Lake av.	Dirt	2,800	2,800	28	8,710	3
18th av N.	Girard av.	Penn av.	Dirt	3,805	2,800	32	9,960	3
Queen av N.	6th av.	10th av.	Dirt	2,394	1,310	24	3,490	2
2nd st N.	Plymouth av.	16th av.	Dirt	1,968	1,180	48	6,290	3
3rd st N.	7th av.	Plymouth av.	Dirt	4,193	1,370	48	10,500	3
10th av N.	3rd st.	5th st.	Dirt	1,280	960	28	3,250	3
10th av N.	4th st.	5th st.	Dirt	640	770	28	1,860	3
12th av N.	Washington av.	Humboldt av.	Dirt	7,056	1,590	36	14,260	3
21st av N.	Lyndale av.	Emerson av.	Dirt	2,512	1,540	28	4,370	3
26th av N. S.	Emerson av.	Penn av.	Dirt	2,083	3,580	16	6,370	3
Elwood av.	6th av.	10th av.	Maced.	2,637	1,580	28	4,370	2
8th av N.	Humboldt av.	Penn av.	Maced.	4,707	2,400	28	7,520	2
11th av N.	Irving av.	Knox av.	Maced.	588	700	28	1,940	2
Irving av N.	Elwood av.	Plymouth av.	Maced.	3,361	1,500	28	6,180	2
James av N.	6th av.	Elwood av.	Maced.	483	1,700	24	2,180	2
James av N.	10th av.	Plymouth av.	Maced.	1,639	1,700	28	4,580	2
Knox av N.	10th av.	Plymouth av.	Maced.	2,494	1,340	28	4,170	2
10th av N.	6th av.	Plymouth av.	Maced.	4,558	2,590	24	6,910	2
Morgan av N.	6th av.	Plymouth av.	Maced.	4,674	2,590	24	6,910	2
Newton av N.	6th av.	Plymouth av.	Maced.	4,686	2,590	24	6,910	2
O'Brien av N.	6th av.	Plymouth av.	Maced.	4,488	2,590	24	6,910	2
Panas av N.	6th av.	Plymouth av.	Maced.	4,488	2,590	24	6,910	2
Queen av N.	10th av.	12th av.	Maced.	1,008	590	24	8,060	2
Sheridan av N.	10th av.	Plymouth av.	Maced.	1,947	1,310	28	1,570	2
7th av N.	Humboldt av.	Elwood av.	Maced.	1,800	1,200	28	4,080	2
Thomas av N.	10th av.	Plymouth av.	Maced.	1,943	1,380	28	820	2
Thomas Place.	Elwood Av.	Plymouth av.	Maced.	1,056	1,540	20	4,290	2
10th av N.	Irving av.	Penn av.	Maced.	3,105	660	24	1,200	2
					1,330	32	6,490	2
12th av N.	Knox av.	Thomas av.	Maced.	4,354	1,430	28	7,750	2
					1,250	24		
Totals				85,759	51,090		166,700	
Total sq. yds. Dirt.	74,490		Labor Cost.				\$782.08	
Sq. yds. all applications Dirt.	207,470		Oil Cost.				1,630.30	
Total sq. yds. Macadam.	92,210		Demurrage.				13.00	
No. of Gallons Dirt.	32,487		Coal.				36.28	
No. of Gallons Macadam.	23,575							

FOURTH WARD OIL SPRINKLING—1915

STREET	FROM	TO	Kind	Frontage	Length	Width	Sq. Yds.	No. Applications
Cedar Lake Road.....	Superior av.....	Penn av.....	Dirt	3,248	2,140	16	3,800	3
Franklin av.....	Dupont av.....	Logan av.....	Dirt	3,831	2,650	24	7,070	3
Superior av.....	Lyndale av.....	City Limits.....	Conc.	6,593	9,990	16	17,760	3
Totals.....				13,672	14,780		28,630	
No. of Gallons.....	11,036	Oil Cost.....						
Labor Cost.....	\$155.60	Demurrage.....						
			\$34.83					
			25.00					

## CITY OF MINNEAPOLIS

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## SIXTH WARD OIL SPRINKLING—1915

STREET	FROM	TO	Kind	Frontage	Length	Width	Sq. Yds.	No. Applications
4th st S.	Riverside av.	22nd av.	Dirt	1,908	1,350	36	5,400	1
5th st S.	16th av.	22nd av.	Dirt	3,503	1,760	32	6,260	1
15th av S.	Washington av.	4th st.	Dirt	1,320	1,330	46	3,010	2
19th av S.	4th st.	7th st.	Dirt	1,779	330	36	36	1
6th st S.	16th av.	27th av.	Dirt	6,428	1,230	36	4,920	2
7th st S.	Cedar av.	20th av.	Dirt	1,320	3,780	36	15,120	1
16th av S.	4th st.	7th st.	Dirt	1,890	710	28	2,210	1
17th av S.	5th st.	7th st.	Dirt	1,780	1,220	36	4,890	1
3rd st S.	21st av.	7th st.	Dirt	660	900	32	3,200	1
20th av S.	4th st.	22nd av.	Dirt	1,920	480	32	1,710	1
21st av S.	Washington av.	7th st.	Dirt	3,719	1,230	28	3,330	1
Locust St.	22nd av.	7th st.	Dirt	538	2,370	36	9,480	2
22nd av S.	4th st.	Bjornson av.	Dirt	1,814	280	28	870	1
23rd av S.	6th st.	7th st.	Dirt	498	1,230	28	3,330	1
24th av S.	6th st.	7th st.	Dirt	569	390	28	1,210	1
25th av S.	6th st.	7th st.	Dirt	461	440	36	1,760	1
26th av S.	6th st.	7th st.	Dirt	370	390	28	1,210	1
27th av S.	6th st.	7th st.	Dirt	155	350	32	1,240	1
Totals				30,624	19,080		71,380	
Total sq. yds.		71,380	Labor Cost.					\$103.80
Sq. yds. all applications		98,990	Oil Cost.					743.51
No. of Gallons		25,434	Demurrage					17.00



NINTH WARD OIL SPRINKLING—1915

STREET	FROM	TO	Kind	Frontage	Length	Width	Sq. Yds.	No. Applications
3rd ave NE.	Central av.	5th st.	Dirt	3,337	1,370	28	5,820	3
10th av NE.	Central av.	3rd av.	Dirt	280	140	28	440	3
Totals				3,617	2,010		6,260	
No. of Gallons		47 50	Miscel.					
Labor Cost		\$23 14	Work done by Second Ward.					\$8.07
Oil Cost		146 30						

TENTH WARD OIL SPRINKLING—1915

STREET	FROM	TO	Kind	Frontage	Length	Width	Sq. Yds.	No. Applications
26th av N, N½	Emerson av.	Penn av.	Dirt	2,888	3,580	16	6,360	3
Totals				2,888	3,580		6,360	

Work done by Third Ward.

## SEVENT WARD OIL SPRINKLING—1915

STREET	FROM	TO	Kind	Frontage	Lengthy	Width	Sq. Yds.	No. Applications
35th st.	Chicago av.	21st av.	Dirt	7,068	3,630	28	13,640	3
36th st.	Bloomington av.	17th av.	Dirt	975	1,320	16	3,050	3
38th st.	Chicago av.	20th av.	Dirt	7,260	4,760	28	14,760	3
39th st.	Chicago av.	12th av.	Dirt	1,986	1,160	28	3,610	3
Totals.				222,467	138,490		393,730	
No. of Gallons.	136,727						\$3,980.63	
Labor Cost.	\$1,581.25						91.50	
							89.55	

Oil Cost.  
Demurrage.  
Coal & Miscel.

## CITY ENGINEER'S REPORT

## TWELFTH WARD OIL SPRINKLING 1915

STREET	FROM	TO	Kind	Frontage	Length	Width	Sq Yds	No Appli- cations
Hiawatha av.....	Lake st.	40th st.	Dirt	14,075	7,300	30	20,200	3
Minnehaha av.....	24th st.	26th st.	Dirt	2,280	1,820	30	6,080	3
60th st.....	34th av.	Hiawatha av.	Dirt	5,308	3,360	32	11,060	3
22nd av S.....	Lake st.	32nd st.	Dirt	2,354	1,320	28	4,110	3
23rd av S.....	24th st.	26th st.	Dirt	2,330	1,300	28	4,080	3
23rd av S.....	Lake st.	38th st.	Dirt	6,970	3,140	28	14,440	3
24th av S.....	24th st.	26th st.	Dirt	2,313	2,100	20	4,910	3
26th av S.....	Milwaukee T.	24th av.	Dirt	2,602	1,380	32	4,700	3
26th st.....	24th st.	26th st.	Dirt	3,365	1,380	32	4,510	3
26th st.....	23rd av.	31st av.	Dirt	3,600	3,110	30	10,370	3
36th st.....	21st av.	23rd av.	Dirt	1,590	900	20	2,600	3
Totals.....				47,606	28,330		97,420	
No. of Gallons.....	44,215		Demurrage.....				\$39.00	
Labor Cost.....	\$400.00		Coal.....				40.40	
Oil Cost.....	1,327.70							

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## EIGHTH WARD OIL SPRINKLING—1915

STREET	FROM	TO	Kind	Frontage	Length	Width	Sq. Yds.	No. Applications
Portland av.	Lake st.	34th st.	Dirt	4,518	2,480	36	9,920	3
Stevens av.	Lake st.	34th st.	Dirt	4,319	2,480	28	7,710	3
2nd av S.	Lake st.	34th st.	Dirt	4,539	3,290	28	7,160	3
22nd st.	L. of Isles Blvd.	Pleasant av.	Dirt	7,239	1,280	28	13,940	3
24th st.	Pleasant av.	Irving av.	Dirt	6,566	4,120	28	11,900	3
25th st.	Chicago av.	Nicollet av.	Dirt	12,897	2,660	28	8,270	3
25th st.	Pleasant av.	L. of Isles Blvd.	Dirt	4,940	1,280	28	14,270	3
26th st.	Chicago av.	Park av.	Dirt	9,252	570	30	1,900	3
26th st.	Pleasant av.	L. of Isles Blvd.	Dirt	1,290	1,290	36	17,190	3
27th st.	Chicago av.	L. of Isles Blvd.	Dirt	15,596	2,840	28	26,810	3
28th st.	Chicago av.	L. of Isles Blvd.	Dirt	15,290	8,510	30	31,490	3
28th st.	Dean Blvd.	L. of Isles Blvd.	Dirt	1,757	1,100	24	2,930	3
28th st.	Cedar Lake av.	Chowen av.	Dirt	1,260	1,760	24	2,000	3
31st st.	Chicago av.	Calhoun Blvd.	Dirt	16,575	2,480	28	39,910	3
32nd st.	Chicago av.	Calhoun Blvd.	Dirt	16,304	1,030	36	35,020	3
33rd st.	Chicago av.	Calhoun Blvd.	Dirt	16,293	3,490	28	26,080	3
34th st.	Pleasant av.	Calhoun Blvd.	Dirt	7,338	6,040	36	14,400	3
Totals				277,968	168,950		536,340	
No. of Gallons	231,943	Coal & Misc.					899.53	
Labor Cost.	\$1,303.74	Demurrage					79.00	
Oil Cost.	6,964.23							

## NINTH WARD OIL SPRINKLING—1915

STREET	FROM	TO	Kind	Frontage	Length	Width	Sq. Yds.	No. Applications
2d ave NE	Central av.	5th st.	Dirt	3,337	1,870	28	5,820	3
10th av NE	Central av.	3rd av.	Dirt	280	140	28	440	3
Totals				3,617	2,010		6,260	

No. of Gallons	47.50	Misc.						
Labor Cost	\$23.14	Work done by Second Ward.						
Oil Cost	146.30							
								\$8.07-

## TENTH WARD OIL SPRINKLING—1915

STREET	FROM	TO	Kind	Frontage	Length	Width	Sq. Yds.	No. Applications
26th av N, N <sup>1</sup>	Emerson av.	Penn av.	Dirt	2,888	3,580	16	6,360	3
Totals				2,888	3,580		6,360	

Work done by Third Ward.

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## ELEVENTH WARD OIL SPRINKLING—1915

STREET	FROM	TO	Kind	Frontage	Length	Width	Sq. Yds.	No. Applications
8th st S.	11th av.	13th av.	Dirt	1,440	720	32	2,560	3
11th av S.	Franklin av.	24th st.	Dirt	2,238	1,830	28	4,140	3
18th st.	10th av.	13th st.	Dirt	1,160	1,080	24	2,880	3
Franklin av.	27th av.	Bridge.	Dirt	2,953	2,220	32	7,890	3
14th st.	10th av.	11th av.	Dirt	300	380	32	1,350	3
15th st.	10th av.	11th av.	Dirt	600	380	28	1,180	3
Milwaukee av.	Franklin av.	24th av.	Dirt	2,287	1,310	20	2,910	3
19th st.	10th av.	13th av.	Dirt	1,160	620	32	2,200	3
Riverside av.	27th av.	Franklin av.	Dirt	1,247	890	28	2,770	3
17th av S.	Franklin av.	24th st.	Dirt	2,282	1,320	32	4,690	3
17th st.	10th av.	11th av.	Dirt	600	380	24	1,010	3
10th av S.	18th st.	24th st.	Dirt	3,033	1,780	32	6,330	3
12th av S.	8th st.	9th st.	Dirt	716	460	32	1,640	3
13th av S.	7th st.	Franklin av.	Dirt	4,379	2,560	32	9,100	3
21st av S.	Franklin av.	Minnehaha av.	Dirt	1,402	840	28	2,610	3
22nd av. S.	Franklin av.	24th st.	Dirt	2,241	1,310	28	4,080	3
19th av.	Franklin av.	27th av.	Dirt	4,825	3,160	32	11,230	3
23rd av. s.	Franklin av.	24th st.	Dirt	2,274	1,310	28	4,080	3
Totals				35,137	22,050		72,650	
Total No. of Gallons	20,786			Oil Cost.			\$617.45	
Total Sq. yds.	72,650			Demurrage			17.00	
Total Sq. yds. all applications.	182,800			Gas & L. Oil for Truck			12.00	
Labor Cost	\$100.50							

## TWELFTH WARD OIL SPRINKLING—1915

STREET	FROM	TO	Kind	Frontage	Length	Width	Sq. Yds.	No. Applications
Hiawatha av.	Lake st.	40th st.	Dirt	14,075	7,300	36	26,200	3
Minnehaha av.	24th st.	26th st.	Dirt	2,250	1,520	36	6,080	3
60th st.	34th av.	Hiawatha av.	Dirt	5,208	3,260	32	11,590	3
22nd av S.	Lake st.	32nd st.	Dirt	2,354	1,320	28	4,110	3
23rd av S.	Lake st.	26th st.	Dirt	2,230	1,300	28	4,050	3
23rd av S.	Lake st.	38th st.	Dirt	8,979	3,140	28	14,440	3
24th av S.	24th st.	26th st.	Dirt	2,313	2,100	20	4,910	3
24th st.	Milwaukee T.	24th av.	Dirt	2,602	1,380	32	5,760	3
25th av S.	24th st.	26th st.	Dirt	2,305	1,350	32	4,910	3
26th st.	23rd av.	31st av.	Dirt	3,900	3,110	30	10,370	3
30th st.	21st av.	23rd av.	Dirt	1,390	900	20	2,000	3
Totals				47,606	28,330		97,420	

No. of Gallons	44,215	Demurrage	\$39.00
Labor Cost	\$400.00	Coal	40.40
Oil Cost	1,327.70		

## THIRTEENTH WARD OIL SPRINKLING—1915

STREET	FROM	TO	Kind	Frontage	Length	Width	Sq. Yds.	No. Applications
Abbott av.	44th st.	47th st.	Dirt	3,532	2,050	28	6,380	3
Aldrich av.	34th st.	44th st.	Dirt	11,814	6,900	26	19,070	3
Aldrich av.	47th st.	49th st.	Dirt	2,370	1,380	26	3,990	3
Beard av.	44th st.	47th st.	Dirt	3,479	2,050	28	6,380	3
Bladell av.	34th st.	46th st.	Dirt	14,116	3,950	32	29,040	3
Bryant av.	34th st.	46th st.	Dirt	12,765	3,950	34		
Chicago av. W.	34th st.	46th st.	Dirt	7,910	7,910	16	14,060	3
Clinton av.	35th st.	37th st.	Dirt	7,078	7,930	12	10,570	3
Columbus av.	34th st.	37th st.	Dirt	2,348	1,380	30	4,900	3
Colfax av.	35th st.	36th st.—37th st.	Dirt	1,764	1,610	26	4,650	3
Colfax av.	35th st.	38th st.	Dirt	3,546	2,030	26	5,860	3
Colfax av.	42nd st.	49th st.	Dirt	8,021	4,920	26	13,350	3
Colfax av.	49th st.	51st st.	Dirt	2,402	1,320	26	3,810	3
Dupont av.	35th st.	36th st.	Dirt	1,177	710	26	2,050	3
Dupont av.	35th st.	36th st.	Dirt	2,228	1,320	26	3,810	3
E. Elmwood Pl.	Nicollet av.	Blvd.	Dirt	1,854	1,020	24	2,720	3
Excelsior av.	Lake st.	City Limits.	Conc.	7,440	4,080	36	16,320	3
Fremont av.	34th st.	36th st.	Dirt	2,352	1,300	26	3,760	3
1st av S.	34th st.	38th st.	Dirt	4,608	2,620	26	7,570	3
4th av S.	34th st.	39th st.	Dirt	5,222	3,260	16	5,800	3
5th av S.	34th st.	39th st.	Dirt	5,911	3,260	28	10,140	3
40th st.	Nicollet av.	Dupont av.	Dirt	5,471	3,060	36	14,110	3
40th st.	Park Blvd.	Washburn av.	Dirt	2,552	600	28		
41st st.	Sheridan av.	Vincent av.	Dirt	1,306	1,490	28	4,540	3
42nd st.	Sheridan av.	Queen av.	Dirt	1,342	700	28	2,180	3
43rd st.	Sheridan av.	Vincent av.	Dirt	883	610	28	2,150	3
	Nicollet av.	L. Harriet Blvd.	Dirt	6,697	2,420	32	1,900	3
					1,610	26	14,030	
43rd st.	Park Blvd.	Xerxes av.	Dirt	3,245	350	20		
44th st.	Park Blvd.	Beard av.	Dirt	5,368	1,740	26	5,030	3
45th st.	Vincent av.	7enth av.	Dirt	2,164	3,000	28	9,330	3
46th st.	Nicollet ave.	Pillsbury av.	Dirt	1,439	1,580	26	3,640	3
46th st.	Garfield av.	Dupont av.	Conc.	2,618	900	32	3,200	3
46th st.	Upton av.	Abbott av.	Dirt	3,246	1,570	32	5,580	3
					1,930	36	7,720	



## THIRTEENTH WARD OIL SPRINKLING—1915

STREET	FROM	TO	Kind	Frontage	Length	Width	Sq. Yds.	No. Applications
47th st.	L. Harriet Blvd.	Beard av.	Dirt	4,288	2,440	28	7,590	3
48th st.	Nicollet av.	Pleasant av.	Dirt	2,234	1,260	28	4,200	3
48th st.	Pleasant av.	Girard av.	Dirt	5,420	1,310	28	10,570	3
50th st.	Pleasant av.	L. Harriet Blvd.	Dirt	5,891	3,390	36	13,560	3
51st st.	Nicollet av.	2nd av S	Dirt	1,773	930	32	3,370	3
52nd st W.	Nicollet av.	Bldg.	Dirt	2,547	2,020	24	5,380	3
Garfield av.	34th st.	41st st.	Dirt	11,514	4,560	26	13,170	3
Garfield av.	41st st.	44th st.	Dirt	7,110	2,050	36	8,200	3
Grand av.	34th st.	40th st.	Dirt	3,950	3,950	16	7,020	3
Harriet av.	34th st.	40th st.	Dirt	7,110	3,950	26	11,410	3
Holmes av.	34th st.	36th st.	Dirt	2,295	1,300	28	4,040	3
Humboldt av.	34th st.	36th st.	Dirt	2,346	1,300	28	4,040	3
Irving av.	34th st.	36th st.	Dirt	2,370	1,300	28	4,040	3
Lyndale av.	34th st.	34th st.	Macad.	23,002	13,110	36	52,440	3
Luverne av.	Elmwood Pl.	Bldg.	Dirt	1,153	600	24	1,600	3
Nicollet av.	38th st.	City Limits.	Dirt	17,468	9,770	32	34,740	3
Oakland av.	34th st.	35th st.	Dirt	1,176	650	28	2,020	3
Oakland av.	37th st.	40th st.	Dirt	3,553	2,040	28	6,350	3
Park av.	34th st.	38th st.	Dirt	5,403	3,300	32	11,730	3
Pillsbury av.	34th st.	46th st.	Dirt	13,894	7,940	28	24,700	3
Pleasant av.	34th st.	42nd st.	Dirt	9,446	5,280	30	17,600	3
Portland av.	34th st.	City Limits.	Dirt	22,219	4,480	36	33,370	3
Queen av.	40th st.	Park Blvd.	Dirt	2,779	8,690	16	5,810	3
Richfield av.	Lake Calhoun.	40th st.	Dirt	1,168	2,180	24	4,800	3
Rustic Lodge av.	Nicollet av.	Pleasant av.	Dirt	2,486	1,350	32	4,800	3
Sheridan av.	43rd st.	Lake Calhoun.	Dirt	5,760	1,400	22	3,420	3
Stevens av.	34th st.	40th st.	Dirt	7,074	3,940	28	10,760	3
2nd av S.	34th st.	40th st.	Dirt	7,082	3,940	26	12,260	3
Thomas av.	40th st.	N. L. L. 8 B I. C. C.	Dirt	2,622	3,940	26	11,380	3
3rd av S.	34th st.	39th st.	Dirt	5,309	1,490	28	4,640	3
34th st.	Chicago av.	Pleasant av.	Dirt	7,503	3,270	26	9,450	3
					1,250	28	19,250	3

## CITY OF MINNEAPOLIS

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## THIRTEENTH WARD OIL SPRINKLING—1915

STREET	FROM	TO	Kind	Frontage	Length	Width	Sq. Yds.	No. Applications
35th st.	Chicago av.	Bryant av.	Dirt	10,585	1,140	32	19,720	3
35th st.	Holmes av.	Irving av.	Dirt	1,029	2,400	28		
36th st.	Portland av.	Chicago av.	Dirt	1,897	2,870	24		
36th st.	3rd av.	Dupont av.	Dirt	9,646	1,580	24	1,550	3
37th st.	Dupont av.	Lake Calhoun.	Dirt		4,800	28	3,070	3
37th st.	Chicago av.	Dupont av.	Dirt	11,880	2,510	28	14,390	3
38th st.	Chicago av.	Dupont av.	Dirt	11,185	7,230	28	7,910	3
38th st.	Nicollet av.	Dupont av.	Dirt	4,625	7,230	28	27,680	3
39th st.	Richfield av.	Upton av.	Dirt	1,232	2,680	32	25,710	3
39th st.	Richfield av.	Upton av.	Dirt	1,232	2,710	28	8,440	3
Upton av.	40th st.	48th st.	Dirt	8,019	1,320	28	2,210	3
Vincent av.	40th st.	43rd st.	Dirt	7,337	2,720	36	17,850	3
Washburn av.	44th st.	47th st.	Dirt		2,170	28		
Wentworth av.	40th st.	43rd st.	Dirt	3,532	720	26	6,270	3
Wentworth av.	48th st.	43rd st.	Dirt	3,746	2,090	28	2,080	3
Wentworth av.	Elmwood Pl.	52nd st.	Dirt	979	250	24	6,380	3
Xerxes av.	43rd st.	47th st.	Dirt		520	24	670	3
York av.	44th st.	47th st.	Dirt	6,586	420	28	1,390	3
Zenith av.	44th st.	47th st.	Dirt	3,532	2,240	16	5,290	3
			Dirt	3,532	2,050	28	6,380	3
Totals				423,708	253,650		775,670	

No. of Gallons	326,831	Demurrage	\$236.17
Labor Cost	\$2,255.00	Coal & Misc.	85.00
Oil Cost	9,533.14		

## SUMMARY OIL SPRINKLING—1915

Ward	Num- ber of Appli- cations	Square Yards			Gallons per Mile	Gallons per Sq. Yd.	Sq. Yards per Gallon	Cost per Square Yard			Cost per Front Foot	Oil Cost Total	Cost of Oil per Front Foot	Factor to Add for Each 16 Rise in Oil	Average Road- way per Gallon	Average Cost of Oil per Gallon
		Dirt	Paved Macadam	Total				Oil	Labor	Total						
1	1	8,760		8,760	4,090	0.3429	2.92	0.01114	0.00217	0.01331	0.01718	80	0.01363	0.00442	23.2	0.03060
2	1		16,670	16,670		0.1407		0.00420	0.00094	0.00514						
	2		6,220	6,220	4,590	0.2314	3.58	0.00940	0.00188	0.01128						
	3		16,120	16,120	27.0	0.4221		0.01260	0.00282	0.01542	0.02647	82	0.02106	0.00747	34.2	0.02900
	1	3,580		3,580		0.1889		0.00370	0.00094	0.00464						
	2	72,030		72,030	6,660	0.3778	2.32	0.01140	0.00188	0.01328						
	3	36,560		36,560		0.5667		0.10710	0.00282	0.01092						
3	2		92,210	92,210	3,930	0.2556	3.91	0.00796	0.00380	0.01149						
	2	15,910		15,910	28.5	0.2968		0.00659	0.00390	0.01029	0.02777	66	0.01539	0.00684	35.1	0.02900
	3	36,560		36,560	7,450	0.4302	2.49	0.01278	0.00371	0.01649						
4	3	28,630		28,630	3,940	0.3655	2.59	0.01222	0.00343	0.01565	0.03697	64	0.02376	0.00810	37.7	0.02944
6	1	43,770		43,770		0.2609		0.00768	0.00108	0.00873						
	2	27,610		27,610	7,040	0.5138	2.81	0.01656	0.00261	0.01916	0.02822	86	0.02429	0.00840	41.9	0.02923
7	3	393,730		393,730	5,210	0.3473	2.88	0.01057	0.00402	0.01459	0.02581	60	0.01789	0.00615	31.9	0.02910
8	3	536,340		536,340	7,260	0.4325	2.31	0.01346	0.00243	0.01589	0.03067	82	0.02503	0.00834	34.7	0.03002
9	3	6,260		6,260	12,470	0.7888	1.32	0.02466	0.00370	0.02836	0.04908	83	0.04080	0.01313	31.1	0.03060
10	3	6,360		6,360	4,040	0.4302	2.49	0.01289	0.00371	0.01660	0.02777	66	0.01539	0.00684	19.8	0.02900
11	2	35,150		35,150		0.2274		0.00707	0.00110	0.00817						
	3	37,500		37,500	4,980	0.3611	3.50	0.01061	0.00165	0.01226	0.02126	88	0.01757	0.00592	37.2	0.02970
	2				29.6											
12	3	97,420		97,420	30.9	0.4838	2.20	0.01444	0.00411	0.01855	0.03796	73	0.02789	0.00910	36.8	0.03030
13	3	775,670		775,670	27.3	0.7010	2.30	0.01270	0.00329	0.01599	0.02930	77	0.02350	0.00795	32.9	0.02930
Totals		2,186,870	131,220	2,318,090												
Average					6,400	0.4018	2.49	0.01211	0.00317	0.01528	0.02877	77	0.02203	0.00757	33.9	0.02912
1 Application					2,290	0.1418	0.88	0.00428	0.00112	0.00540	0.00778					
Assumed 3 Applications					6,870	0.4264	2.64	0.01284	0.00336	0.01620	0.03048					

**BRIDGE DEPARTMENT.**

Minor finishing work was done on the Plymouth avenue and 42nd avenue north bridges, which were practically completed last year.

A new concrete arch bridge was built over Minnehaha creek on Hiawatha avenue, removing the old wooden pile bridge at a cost of \$5,831.76. This bridge is 68.6 feet in length, has a roadway of 30 feet, and has two 6-foot sidewalks. The span arch is 29 feet.

The total amount of money spent for bridge repairs was \$20,304.96.

**THIRD AVENUE BRIDGE.**

During the year piers 6, 7, 8 and 9, and arches for spans 3, 4, 5, 6, 7 and 9 were completed. Span 8 was started, and would have been completed but for delays caused by cold weather, and delays in getting material—partially due to the failure of the rock company to deliver rock, and to the congestion in the freight yards.

The work during this year was carried on rather successfully. The weather conditions, on the whole were very favorable with exception of high water. During the spring and early part of the summer the river was unusually high—which gave quite a little trouble in setting cribs for the arch centering, delaying us about a month.

A problem which gave more trouble than anything else, altho not a part of the bridge work itself, was the taking care of the General Electric Company's power transmission wheel which stood directly east of pier 7. In order to complete pier 7, it was necessary to raise this wheel 8 feet, which had to be done, between Saturday night and Monday morning—so as not to delay the industries getting power from this source. Finally an agreement with the General Electric Company was reached, and the wheel taken out entirely when the arch for span 8 was started, altho it caused a delay of about two weeks on this span.

Deliveries of material were, on the whole, good. During the season of 1915, 1,220 carloads of materials were handled. This only includes rock, sand, cement, steel and coal. The timber, which amounted to nearly 1,000,000 feet, was all handled by teams.

**SUMMARY OF MATERIALS HANDLED.**

14,283 cubic yards of concrete were placed in piers.  
 11,459 cubic yards of concrete were placed in arches.  
 602 cubic yards of concrete were placed in walls.  
 26,344 cubic yards of concrete were placed in 1915.  
 203.3 tons of reinforcing steel were placed in piers.  
 752.7 tons of reinforcing steel were placed in arches.  
 956.0 tons of reinforcing steel were placed in 1915.  
 887 lineal feet of sheet piling were driven.  
 42,280 feet B. M. timbering for coffer-dams were framed and placed.  
 3,325 cubic yards of material were excavated out of coffer-dams.  
 37,350 square feet of forms placed for piers.  
 513,000 feet B. M. timbering for centering in cribs and piling.  
 392 tons of "T" beams for centering supports.  
 1,039,850 feet B. M. in arch centering.  
 59,900 feet B. M. in sidewalk and pedestal forms.

**SUMMARY OF SCALE OF WAGES PAID.**

Foremen, \$4.00 to \$6.00 per 8-hour day.  
 Structural iron workers, \$5.00 per day.  
 Steam engineers, \$4.00 per 8-hour day.  
 Bucket riders, \$4.00 per 8-hour day.  
 Carpenters, \$4.00 per 8-hour day.  
 Blacksmith, \$3.00 per 8-hour day.  
 Handy men, \$2.65 per 8-hour day.  
 Laborers, \$2.50 per 8-hour day.  
 Master mechanic, \$150.00 per month.  
 Instrumentman, \$90.00 per month.  
 Material clerk, \$3.50 per day.  
 During the season of 1915, \$331,846.02 was spent. Of this \$131,030.56 was paid out for labor, and \$200,815.46 for materials and equipment. Credits for the year amount to \$11,865.44.

The inventory taken January 1, 1916, places the salable value of the plant equipment and materials on hand, at \$90,246.57.



Third Avenue Bridge Progress.



Third Avenue Bridge Progress.



Mr. Chapman and Party Third Avenue Bridge

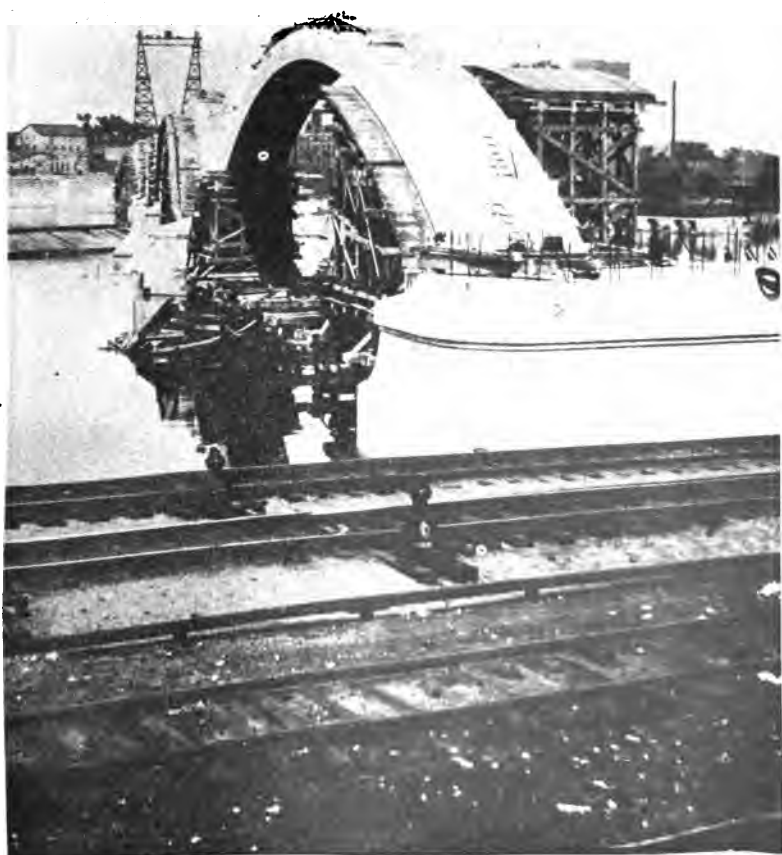


Falsework Moved from First Rib, First Span, to Second Rib.





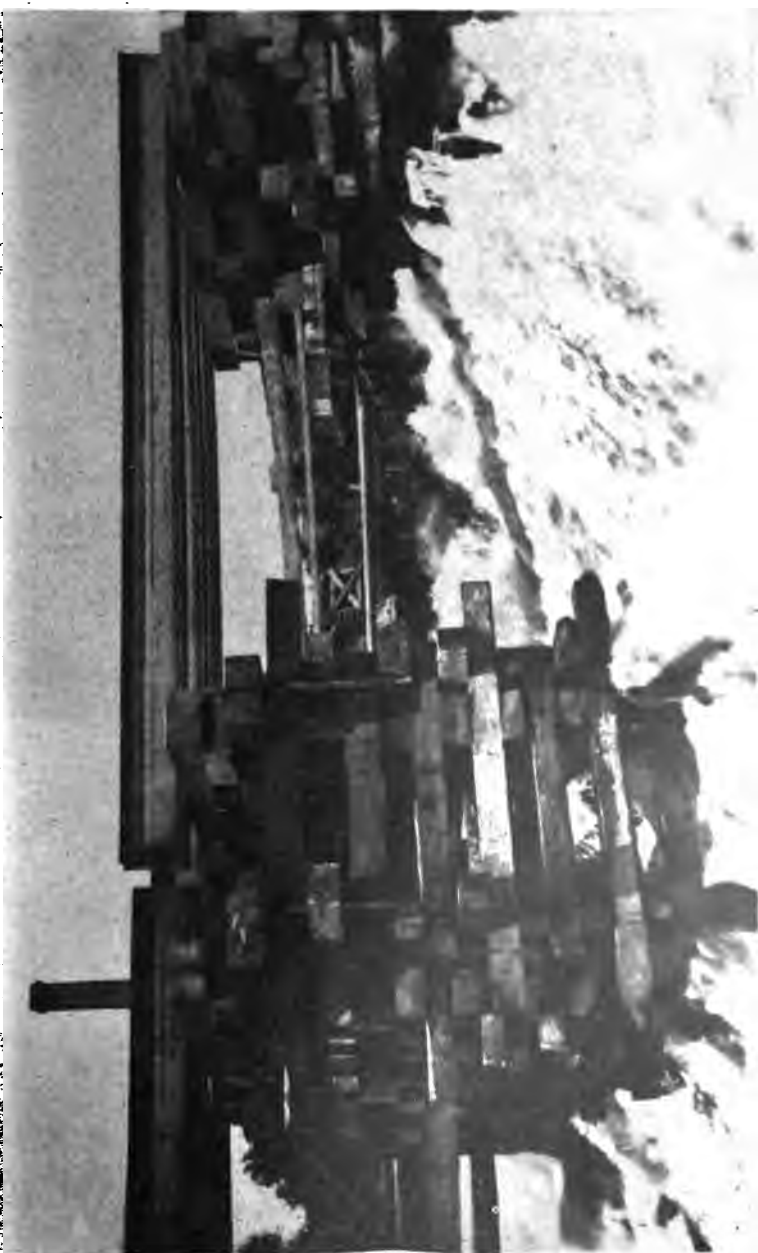
Mr. Cappelen and Party, Third Avenue Bridge.



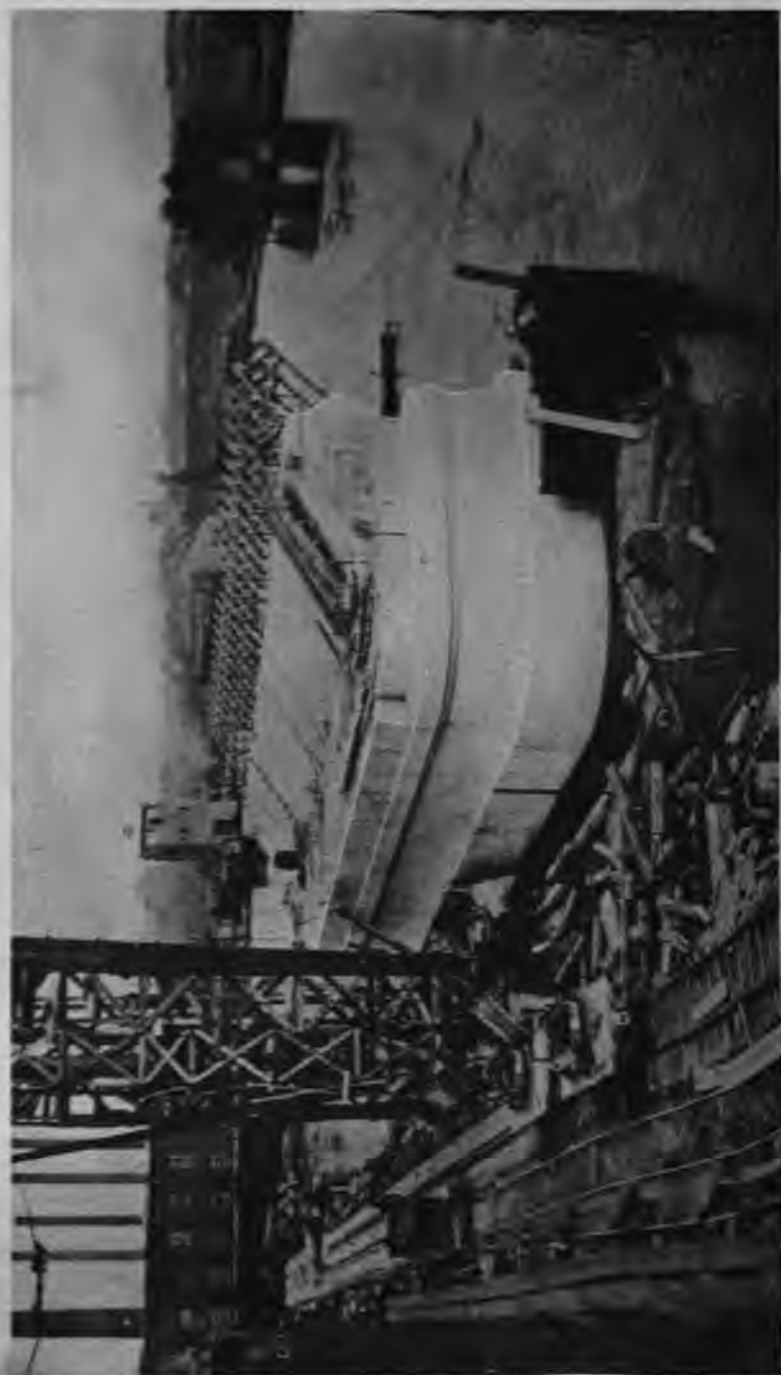
Moving Centering, Third Avenue Bridge.



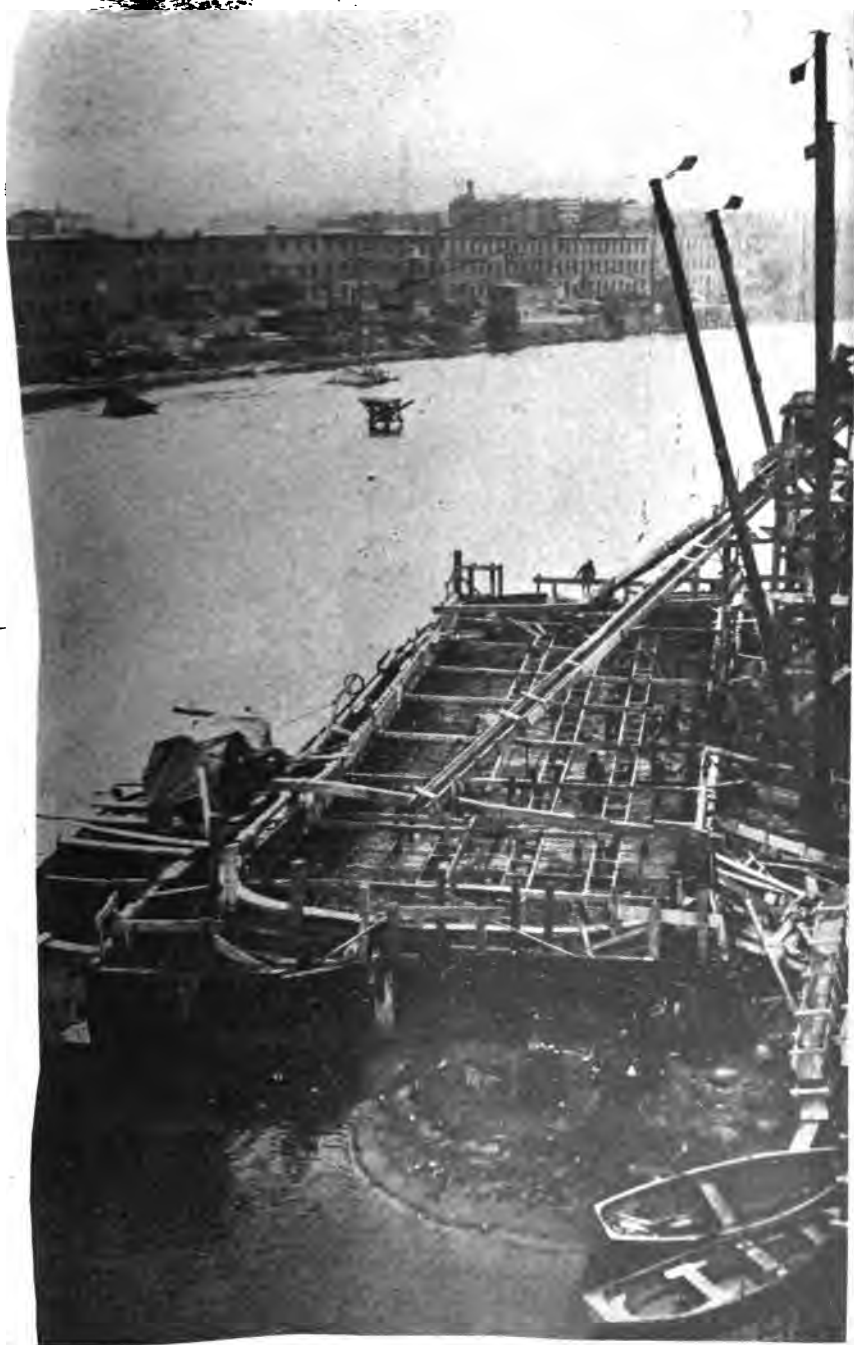
*Third Avenue Bridge—Driving Rivets in Reinforcing Steel.*



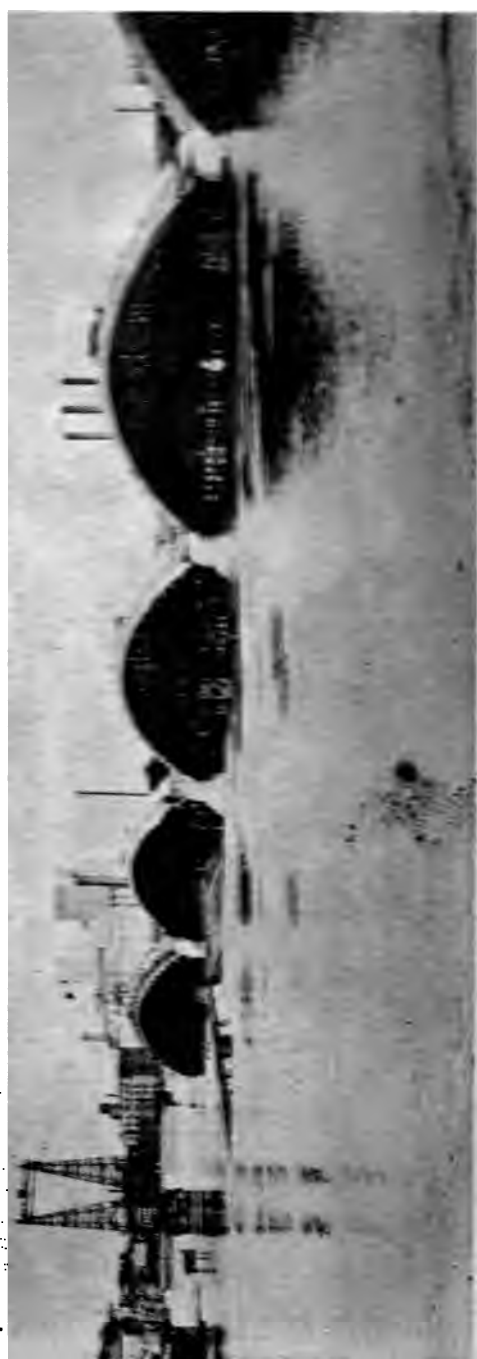
Third Avenue Bridge, Cribs for Falsework, High Water.



Third Avenue Bridge, East Abutment, Pier No. 2.



Third Avenue Bridge—East Abutment, Pier No. 9.

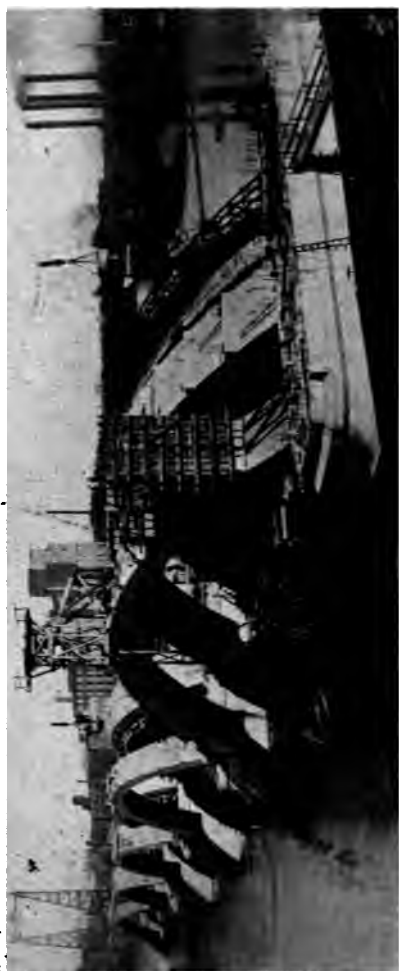


Third Avenue Bridge Progress.



Third Avenue Bridge, Ice Cakes Going Over Dam.



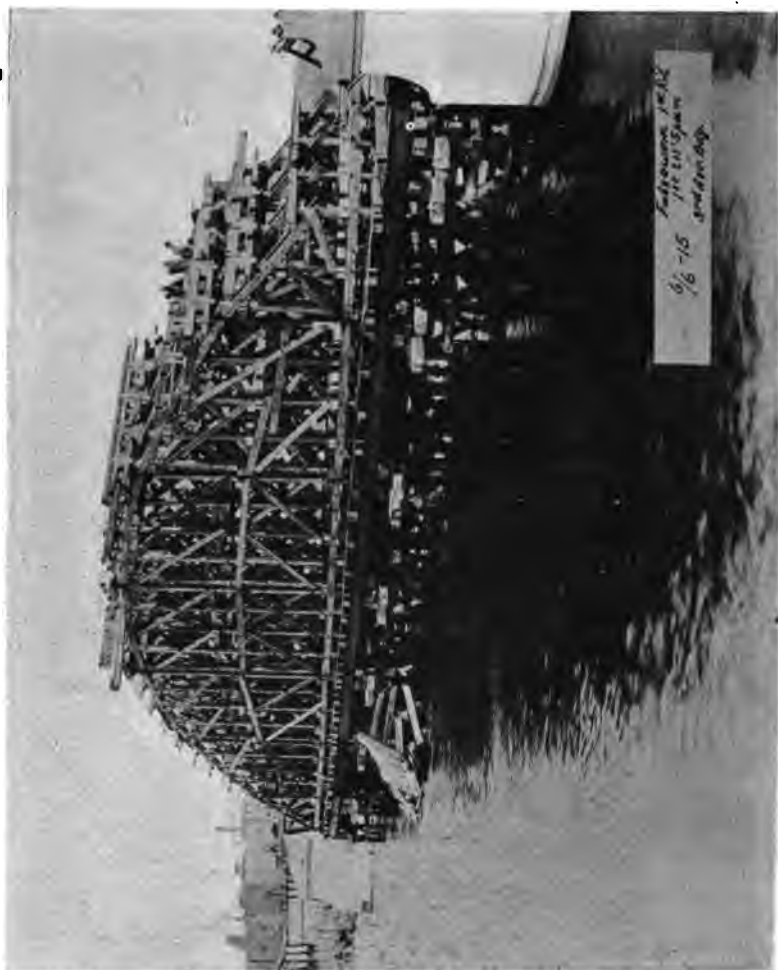


Third Avenue Bridge "Progress."



12/18/15 #74

PAVING CONCRETE  
East Side 120' Span  
3rd Ave. Bldg.



## WATER DEPARTMENT.

The conditions at the pumping stations during the year 1915 remain exactly the same as in 1914; no changes of any kind having been made.

According to previous recommendations, the cast iron distributing main for South Minneapolis was put in during the year, as follows:

In 22nd street east from main line of Chicago, Milwaukee & St. Paul railway tracks to 18th avenue south, in 18th avenue south from 22nd street to 32nd street, with a 36-inch main; thence to 34th street with a 30-inch main; thence from 34th street to 37th street, and in 37th street to Cedar avenue, and in Cedar avenue to 38th street with a 24-inch main.

To complete the entire distributing main for South Minneapolis, a gap was left between East 22nd street and the Chicago, Milwaukee & St. Paul railway tracks to the end of the completed main in 11th avenue S. E., and 2nd street, including the river crossing.

As this river crossing could only be put in during the winter, contracts were made for delivery during the winter of 63 feet of 48-inch by  $\frac{3}{4}$ -inch steel riveted pipe at \$9.15 per foot, delivered f. o. b. cars at Minneapolis, 414 feet of 48-inch by 7-16-inch steel riveted pipe at \$9.90 per foot, and 1,012 feet of 48-inch by  $\frac{1}{2}$ -inch pipe at \$10.90 per foot for the river crossing, 2,858 feet of 46-inch by 5-16-inch lock bar steel pipe at \$6.15 per foot, and 2,993 feet of 40-inch by 5-16-inch lock bar pipe at \$5.80 per foot, the end of which will connect with the above described 36-inch cast iron pipe.

Contracts for the above steel pipe was awarded to the East Jersey Pipe Company.

To perfect the distribution system in the lake district, a new distribution main, 24 inches in diameter, was built in 27th street west from Lyndale avenue to Aldrich avenue, in Aldrich avenue south to 42nd street; and a 16-inch main in Aldrich avenue south from 42nd street to 48th street.

This work made it possible to establish a high service district in the Washburn park section of the city, to improve the pressure conditions during hot, dry weather.

In order to secure the only available site for this purpose, the Washburn Orphan's Home private water tower was acquired, in conformity with an ordinance approved September 15, 1893, giving the city an option on the property. A lot was purchased on the corner of 44th street and Aldrich avenue south, and two 750 gallon electrically driven single-stage Allis-Chalmers Centrifugal pumps were installed in this small station for this purpose.

The cost of the work done during 1915, was as follows:

Washburn Park Tower and one acre of land.....	\$14,000.00
Lot for pumping station site.....	900.00
Pumps and equipment.....	\$2,305.66
Material, pipe and valves.....	1,592.16
Labor .....	1,302.06
	5,299.88
Total cost .....	\$20,199.88

The work remaining to be done is the raising of the height of the Washburn park tower, which could not be completed during the year of 1915.

### CROSSING OF THE H & D DEPRESSION WORK WITH WATER MAINS.

During last year the water mains, were carried under abutments and road bed of the depression work, making the cost excessive. To overcome this, the following method was adopted this year: The mains were carried under the floor of the bridges between the concrete beams on proper supports not interfering with the head room. The pipe was galvanized wrought iron covered with Lith Brine or refrigerating covering attached with copper wire ties and painted with shellac. At each end of the bridges the pipes were dropped in a manhole to the usual depth below grade and connected to the street mains with the usual lead joints.

The following crossings were made in this manner:

Harriet avenue .....	145.6 feet	6-inch	G. W. I. pipe .....	\$620.66
Grand avenue .....	150.3 feet	6-inch	G. W. I. pipe .....	544.40
Pillsbury avenue .....	131.2 feet	6-inch	G. W. I. pipe .....	530.64
Nicollet avenue .....	115.5 feet	6-inch	G. W. I. pipe .....	560.90
First avenue south .....	144.5 feet	6-inch	G. W. I. pipe .....	498.56
Second avenue south .....	144.3 feet	6-inch	G. W. I. pipe .....	672.24
Stevens avenue .....	132.2 feet	6-inch	G. W. I. pipe .....	586.48

### SUMMARY OF WATER WORKS REPORT.

1915.

#### PUMPING STATIONS.

No. 1—Abandoned: pipes cut off 1914.

No. 2—Abandoned: machinery sold. City owns three primary and two secondary mill powers at this site.

No. 3—Camden: two 12 M. G. Worthington steam pumps—not in use. One Worthington electrically driven centrifugal turbine pump, Westinghouse motor, 1,200 H. P. 20 M. G. capacity.

No. 4—Northeast: two 15 M. G. triple expansion Holly pumping engines. One Worthington electrically driven centrifugal turbine pump, Westinghouse motor, 1,200 H. P. 20 M. G. capacity.

Electric power furnished by Minneapolis General Electric Company on the following terms: \$4.00 per million gallons against a head of 240 feet with a combined pump and motor efficiency of 72 per cent.

Total nominal capacity of two operating stations 70 million gallons daily.

#### PUMPING DATA.

Station No. 3. Centrifugal .....	1,145,170,000 gal.	12.21%
Station No. 4. Centrifugal .....	8,249,860,000 gal.	87.76%
Station No. 4. Steam .....	8,359,259 gal.	.04%
Total pumpage, 1915 .....	8,401,389,259 gal.	100.00%

#### FUEL USED.

Station No. 3. Banking .....	104.34 tons
Station No. 4. Banking .....	131.60 tons
Station No. 4. Pumping .....	1.60 tons

#### CENTRIFUGAL PUMP PERFORMANCE.

	Station No. 3.	Station No. 4.	Combined.
Running time, hours .....	1,188.5	7,767.5	8,956.0
Gallons pumped, M. G. ....	1,145.17	8,249.86	9,395.03
Average head, feet .....	249.86	246.71	248.29
Average efficiency, per cent. ....	70.10	73.96	71.95

## TOTAL PUMPING EXPENSE.

Repumping and park expense.....	\$2,420.76
Actual pumping expense .....	58,350.94

Total .....	\$60,771.70
Total gallons pumped.....	9,401,389,239
Average cost per million gallons.....	\$6.20
Average head .....	247.86
Cost per M. G. raised one foot.....	.025

## DETAIL COST OF ELECTRICAL PUMPING

K. W. H. consumed during 1915.....	9,937,750
Total cost of electric power.....	\$37,954.74
Average cost per million gallons.....	\$4.038
Average head centrifugal pumps.....	248.29
Cost per million gallons raised one foot.....	\$0.0163
Average cost per K. W. H. ....	\$0.00381
No. K. W. H. per M. G. to reservoir.....	1,067.00
No. K. W. H. per M. G. raised one foot.....	4.26
Average combined pump and motor efficiency.....	71.95%

## WATER MAINS

## SUMMARY OF WATER MAINS LAID IN 1915.

Water mains, street crossings and acquisitions:

6-inch pipe, feet.....	67,994.0	
8-inch pipe, feet.....	13,309.1	
12-inch pipe, feet.....	19,307.4	
16-inch pipe, feet.....	6,282.6	
		\$186,270.74

Distribution mains:		
16-inch pipe, feet.....	3,962.0	\$12,493.53
24-inch pipe, feet.....	15,892.5	82,385.80
30-inch pipe, feet.....	1,437.7	10,894.61
36-inch pipe, feet.....	2,636.2	24,050.81
		129,824.75

Total feet.....	130,821.5	Total cost.....	\$316,095.49
Total miles .....	24.77		

Note: In the above table is included 1,540.0 feet of 6-inch pipe in Prospect avenue between Highview avenue and Fiftieth street west, acquired from the Washburn Orphans' Home.

The above table includes the following distribution mains located as shown below:

	Size.	Feet.
Eighteenth avenue distributor:		
In 22d St. E. from 18th Av. E. to main line C. M. & St. P. Ry.....	36-inch	556.0
In 18th Av. S. from 22d St. E. to 24th St. E.....	36-inch	627.6
In 18th Av. S. from 26th St. E. to N. R. of W., C. M. & St. P. Ry.....	36-inch	1,452.6
In 18th Av. S. from 32d St. E. to 34th St. E.....	30-inch	1,437.7
In 18th Av. S. from 34th St. E. to 37th St. E.....	24-inch	1,947.7
In 37th St. E. from 18th Av. S. to Cedar Av.....	24-inch	309.6
Superior avenue cross-connection:		
In Superior Av. from Lyndale Av. N. to Waverly Place	24-inch	3,576.0
Aldrich avenue south distributor:		
In 27th St. W. from Lyndale Av. S. to Aldrich Av. S..	24-inch	287.1
In Aldrich Av. S. from 27th St. W. to 42d St. W.....	24-inch	9,772.1
In Aldrich Av. S. from 42d St. W. to 48th St. W.....	16-inch	3,962.0

## SUMMARY OF ALL PIPE IN THE CITY, DECEMBER 31, 1915.

6-inch pipe, feet.....	1,734,638.9
8-inch pipe, feet.....	440,903.0
10-inch pipe, feet.....	16,147.2
12-inch pipe, feet.....	385,593.0
16-inch pipe, feet.....	165,393.9
20-inch pipe, feet.....	3,100.0
24-inch pipe, feet.....	124,027.8
30-inch pipe, feet.....	11,282.8
34-inch pipe, feet.....	15.8
36-inch pipe, feet.....	46,702.1
42-inch pipe, feet.....	4,976.5
48-inch pipe, feet.....	30,366.2
50-inch pipe, feet.....	33,564.4
54-inch pipe, feet.....	15,632.2
60-inch pipe, feet.....	402.9

Total feet .....	3,012,746.7
Total miles .....	570.59

## HYDRANTS AND GATES SET IN 1915.

Hydrants .....	145
6-inch gates .....	290
8-inch gates .....	22
10-inch gates .....	2
12-inch gates .....	22
16-inch gates .....	19
24-inch gates .....	12
30-inch gates .....	1
36-inch gates .....	1
42-inch gates .....	1
48-inch gates .....	1

## TOTAL GATES AND HYDRANTS IN SYSTEM, DECEMBER 31, 1915.

Hydrants .....	5,485
4-inch gates .....	12
6-inch gates .....	3,576
8-inch gates .....	694
10-inch gates .....	22
12-inch gates .....	529
16-inch gates .....	221
20-inch gates .....	7
24-inch gates .....	145
30-inch gates .....	7
34-inch gates .....	1
36-inch gates .....	26
42-inch gates .....	7
48-inch gates .....	23
50-inch gates .....	1
54-inch gates .....	4
60-inch gates .....	2

Total gates .....	5,553
Number of watering troughs .....	8
Number of watering posts .....	26
Number of winter sprinkling standpipes .....	265
Number of summer sprinkling standpipes .....	290
Total standpipes .....	685

## WATER CONNECTIONS.

Total number of taps in use .....	58,029
Total number of meters in use .....	54,509

## 54-INCH FORCE MAIN TUNNEL.

The tunnel driven through the ledge at Thirty-seventh avenue northeast for the 54-inch force main was lined with reinforced concrete and made of sufficient section to accommodate an additional force main. The work also involved the removal of heavy timbers supporting an unstable and threatening overburden in a big cave-in outside of the tunnel. The length of the tunnel section proper was 114.0 feet.

Labor .....	\$4,209.47
Material .....	2,255.51
Total cost .....	\$7,564.98



Piping in Connection With the Track Depression Work.





Piping in Connection With the Track Depression Work.



Aldrich Avenue South, Booster Pumping Station.

### FILTRATION PLANT.

Although the four additional new filters, and the new coagulation basins were put in operation late in December of last year, considerable work was done to tune the plant up and finish everything complete, including grading and sodding.

The additional amount spent was, \$2,187.41 on the filters, and \$1,639.22 on the coagulation basins.

The complete filtration plant now consists of 16 filters, from 3 1/2 to 4 million gallons each capacity, and four coagulation basins, two of 1,300,000, and two of 1,500,000 gallons capacity.

### FILTRATION DATA.

The complete laboratory, operation and cost data for the three years that the filtration plant has been in service will be found in the following tables; making the comparison possible for 1913; 1914 and 1915, at a glance:

Table No. 1 shows amount of water filtered; rate of filtration; wash water; chemicals used; fuel and electric energy used.

Table No. 2, cost data.

Table No. 3, new construction cost, not chargeable to operation.

Table No. 4, routine chemical laboratory tests; odor; turbidity; color; alkalinity, etc.

Table No. 5, sanitary chemical used.

Table No. 6, analysis of mineral residues.

Table No. 7, bacteriological data.

Table No. 8, bacteriological data; B Coli determinations.

Table No. 9, microscopical examinations.

Table No. 10, typhoid fever statistics.

Table No. 11, comparison of color in river water with precipitation data.

Table No. 12, relation of amount of water filtered, to precipitation and temperature data.

Table No. 13, reduction in color per grain of alum.

Chart No. 1, typhoid fever chart.

Typhoid fever statistics for Minneapolis for the years 1900 to 1915 inclusive, will be found in Table No. 10, while the accompanying Chart No. 1, shows diagrammatically the typhoid death rate per 100,000 for the same period. It is interesting to note that the typhoid death rate has remained practically the same since 1911, the year following the installation of the hypochlorite of lime treatment of the city water supply, until the year 1915 when it dropped to 7 per 100,000. This is the lowest typhoid death rate for Minneapolis of which there is any record, and one of the lowest of any city in the United States.

The relation between the rainfall on the Mississippi water shed above Minneapolis and the color of the river water at Minneapolis is shown in Table No. 11. This relation is masked somewhat by the storage of the flood waters in the large reservoirs controlled by the U. S. government, and also influenced by the intensity of the precipitation during short intervals of time. It may be stated in general from the data at hand that the cumulative effect of the rainfall upon the color for the succeeding months is apparent and that a decided increase in color of the river water at Minneapolis follows in from 15 to 30 days a heavy precipitation on the Mississippi water shed above Minneapolis.

Table No. 12 shows the relation of the amount of water filtered each month of the years 1913, 1914 and 1915 to the total monthly precipitation and average temperature data in Minneapolis for each month as supplied by the U. S. Weather Bureau.

Table No. 13 indicates the added efficiency of the two additional coagulation basins in reducing the amount of alum used. The parts per million of color removed by one grain of alum is shown for each month of the three years as compared with the number of coagulation basins in service.

The number of visitors registered at the filtration plant for the year 1915, was 9,089.

#### OPERATION AND COST DATA—GENERAL.

Table No. 1, shows that the greatest amount of water was filtered during 1915, but as the filtration plant was not put into operation until January 10, 1913, the year 1913 would show the highest amount, were these ten days included in the total. The year 1913 shows the highest average amount of water filtered daily 26,218,000 gallons, and a maximum of 45,817,000 gallons in 24 hours.

The rainfall for 1915 was 33.72 inches; for 1914 it was 31.15 inches. The normal rainfall is 29.34 inches. The 1913 rainfall was 26.09 inches. The difference in rainfall of 7.63 inches between 1913 and 1915, very largely accounts for the difference in amount of water used.

The average number of filters in service was increased from 9 in 1913 and 1914, to 13 in 1915, and the rate of filtration reduced from  $3\frac{1}{4}$  to  $2\frac{1}{4}$  million gallons per filter per 24 hours. The additional filters during 1915 also caused an increase of 50 per cent in length of filter runs over that of 1914, and a decrease in the amount of wash water from 4 to 3.7 per cent of the total amount filtered. The maximum capacity of the plant now is 64,000,000 gallons.

#### COAGULANT.

The amount of alum used in 1914 was 10 per cent less than in 1913, while the amount used in 1915 was 15 per cent less than was used in 1914, and 24 per cent less than the amount required in 1913. This saving in alum was partly due to the two additional coagulation basins and the four additional filters. See Tables 1 and 13. The cost for alum per million gallons of waters for each of the three years was as follows: 1913, \$4.66; 1914, \$4.11; and 1915, \$3.47. (Table No. 2.)

#### STERILIZATION.

Hypochlorite of lime has been used for sterilization since the plant was started and until December 6, 1915, when it was replaced by liquid chlorine. The high price of hypochlorite and its scarcity caused by the present European war, necessitated its replacement by liquid chlorine. Three Wallace and Tierman chlorinating machines were installed and have worked very satisfactorily. One machine can be used before water is filtered; one after water is filtered; and one on a by-pass for emergency case on filter effluent.

The amount of hypochlorite of lime used in 1915 was 48 per cent less than used in 1914. This reduction was due largely to the change in application of the sterilizing agent from the unfiltered to the filtered water. Such a change was considered advantageous because it helped to eliminate the trouble from tastes and odors which had occurred at times. The cost for hypochlorite was reduced from 35 cents per million gallons in 1914, to 21 cents in 1915. (Table No. 2.)

## WATER SOFTENING.

Approximately 120 tons of lime were used at intervals during the first four months of 1915 in experimenting with water softening on a practical scale.

Many unforeseen obstacles were met with when the lime treatment was begun. The lime was slaked in concrete mixers (originally installed for this purpose) which did not work according to the theory of the engineers who designed the original plant. Lime could not be slaked and made into milk of lime fast enough to soften the desired amount of water flowing through the plant at the rate of one million gallons per hour. The milk of lime solution had to be made as concentrated as possible so as to get all the lime possible into the water, and it was found that the lime pumps and piping were inadequate to handle this amount of lime. Moreover the bottom of the lime tanks are below the sewer grade and so it was necessary to clean the sludge from the tanks by hand as flushing was not possible. The best grades of lime obtainable in this region were tried but even then the amount of sludge was a hindrance. It was found also that from 25 to 50 per cent of the value of the lime was lost through the lack of proper slaking in the concrete mixers. This could not be overcome with the plant at hand. It was finally decided that softening with the present plant which was not originally intended as a softening plant, was out of the question, and that if a soft water were demanded by the people of Minneapolis, additional buildings and equipment specially designed for the purpose would be required.

That the water can be softened if the proper facilities are at hand is shown by the fact that on January 20, 1915, for example, the alkalinity of the river water was reduced from 204 to 98, and the total hardness from 214 to 117 parts per million. The softening effect would have been greater had it been possible to get more lime into the water. The amount of lime used was 9 grains per gallon, or 1,290 pounds per million gallons of water. This lime when received at the plant had 78 per cent available CaO, but after slaking and making into milk of lime the available CaO was only 55.5 per cent, a loss of 22.5 per cent, due to poor slaking and agitation in the tanks. On the basis of the original content of 78 per cent available CaO, 6 grains per gallon would have given approximately the same results as did the 9 grains of lime. The cost for 6 grains of lime per gallon would have been \$3.18 per million gallons instead of \$4.79 for the 9 grains used. It seems probable, judging from the laboratory results as well as those from the experiments on a practical scale, that when lime is used for softening, especially if there is a high color in the water, the amount of alum required may be considerably reduced. The clogging of the filter sand by lime showed the need of a larger period of reaction and sedimentation before filtering the water.

The lime added to the water in 1915 increased by 10 cents per million gallons the average cost of water purification for the year.

## TOTAL COST OF OPERATION.

The total cost per million gallons for purification of the water was \$9.18 in 1913, \$9.40 in 1914, and \$8.21 in 1915. The reduction in cost for 1915 was due largely to the decrease in the amount of alum and hypo used, and also to the reduction from the total costs for the year of the amounts for supplies purchased.

## LABORATORY DATA.

The average turbidity of the river water as it is received in the sedimentation basin at the filtration plant has been practically the same for each of the three years. The average color of the river

water has decreased somewhat from year to year, the maximum color being 130 parts per million in 1914, as compared with 86 parts in 1915. The average color of the filtered water was 18 parts per million in 1913, 17 parts in 1914, and 14 parts in 1915.

The average mineral content of the river water and filtered water has remained fairly constant during the past three years. The chemical data are shown in detail in Tables Nos. 5 and 6, and it does not seem essential to comment on them at length.

The bacteriological data are shown in Table No. 7. It will be observed that the average number of bacteria in the river water during 1915 was somewhat higher during either of the preceding years. The filtered water shows practically the same average number of bacteria per cubic centimeter for each of the three years, while the number of bacteria in the city tap samples during 1915 shows a rather marked decrease over 1914. This is accounted for by aftergrowths of bacteria in the clear water reservoir during April and May of 1914.

It is apparent from the results of the tests for Colon Bacillus that the filtered water sampling point is too close (40 feet) to the point of application of the sterilizing agent which does not have sufficient time for proper reaction before the samples are taken. It will be observed that the filtered water showed Colon Bacillus absent in practically 100 per cent of all samples analyzed when taken from a tap in the distribution main in front of the superintendent's residence.

The bacteriological data are substantiated by the low typhoid fever death rate for Minneapolis for the year 1915. The city water has been uniformly safe and wholesome.

The excellent results obtained at the filter plant are due to the painstaking and careful attention to operation by Superintendent L. I. Birdsall and his loyal crew.

TABLE NO. 1  
WATER WORKS DEPARTMENT—PURIFICATION DIVISION

FILTERS										CHEMICALS USED						Electric Energy Used K.W.H.
Rate of Filtration Mill Gals. 24 Hours	No. of Filters in Service	Period Between Washing Hours	Number of Filters Washed	Loss of Head Feet	Water Filtered Gallons		Wash Water		Coagulant Pounds	Lime		Chlorine		Fuel Used Pounds		
					Total	Net	Gallons	Per Cent		Grains Per Gal.	Pounds	Grains Per Million				
													Grains Per Gal.		Pounds	
1913																
Max. Daily						45,817,000	44,452,000	1,218,000	6.3	34,417	8.11					
Min. daily						14,704,000	14,192,000	170,000	0.7	1,396	0.39					
Aver. daily	3½	9	13½			25,889,000	25,114,000	775,000	3.0	12,820	3.47					
Total...						9,294,198,000	9,016,907,000	275,291,000	...	4,602,517				*210,652	925,610	
1914																
Max. daily						44,949,000	42,462,000	2,860,000	9.8	39,750	9.36					
Min. daily						10,256,000	9,682,000	...	0.0	1,400	0.50					
Aver. daily	3½	9	24½			25,139,000	24,126,000	1,010,000	4.0	11,175	3.11					
Total...						9,175,840,000	8,806,942,000	368,398,000	...	4,078,783				*199,544	734,621	
1915																
Max. daily						36,806,000	35,933,000	1,728,000	7.1	24,700	5.70					
Min. daily						17,800,000	17,254,000	186,000	0.8	2,200	0.64					
Aver. daily	2½	13	37½			25,687,000	24,743,000	944,000	3.7	9,641	2.63			▲ 260 ■ 62	0.3	
Total...						9,375,681,000	9,031,060,000	344,621,000	...	3,518,974				*239,658 ▲ 104,518 ■ 1,600	870,769	
															268,180	

Notes: \*Lime used in water softening experiments.  
 ▲Hydrochloric of Lime.  
 ■Liquid Chlorine.  
 •High wash-water due to micro-organisms.

TABLE NO. 2  
WATER WORKS DEPARTMENT—PURIFICATION DIVISION

COST OF PURIFICATION												
	Coagu- lant	Lime	Chlorine	Fuel	Electric Energy	Wash Water	Supervision and Office		Laboratory		Operation	
							Wages	Supplies	Wages	Supplies	Wages	Supplies
1913												
Total	43,203.65		3,328.24	1,507.26	3,170.74	5,566.65	2,960.00		3,480.00		17,098.50	4,901.24
Per Mill. Gals.	4.66		0.36	0.17	0.34	0.60	0.32		0.38		1.84	0.53
1914												
Total	37,746.62		3,165.87	1,835.86	3,060.85	7,377.96	3,626.64	120.23	3,480.00	1,067.49	18,125.35	1,234.96
Per Mill. Gals.	4.11		0.35	0.20	0.33	0.80	0.40	0.01	0.38	0.12	1.98	0.14
1915												
Total	32,501.92	913.41	1,922.38	1,930.10	3,016.56	6,892.42	3,960.00	59.16	3,480.00	937.76	17,646.52	998.80
Per Mill. Gals.	3.47	0.10	0.21	0.21	0.32	0.74	0.42	0.01	0.37	0.10	1.88	0.11



TABLE NO. 2—Continued  
WATER WORKS DEPARTMENT—PURIFICATION DIVISION

	COST OF PURIFICATION								Interest and Depreciation	Credits	Total Net Cost
	New Machinery and Equipment		Total Purification Cost		Maintenance and Repairs		Total Cost				
	Wages	Supplies	Wages	Supplies	Wages	Supplies	Wages	Supplies			
1913											
Total											
Per Mill. Gals.											
1914											
Total											
Per Mill. Gals.											
1915											
Total											
Per Mill. Gals.											

TABLE 3

Year	New Construction		Reservoir Boulevard		Old Reservoir Expense		Total Cost		Total Net Cost
	Wages	Supplies	Wages	Supplies	Wages	Supplies	Wages	Supplies	
1913...									
1914...	\$84.80	\$1,028.58					\$84.80	\$1,028.58	\$1,113.38
1915...	372.75	2,252.50	\$621.51	\$449.19	\$67.50	\$22.50	1,061.76	2,724.19	3,785.95

WATER WORKS DEPARTMENT PURIFICATION DIVISION

SUMMARY OF ROUTINE CHEMICAL LABORATORY TESTS

Descriptive	Parts per Million													
	Temp		Turbidity		Color		Alkalinity as CaCO <sub>3</sub>		Inorganic as CaCO <sub>3</sub>		Total Hardness as CaCO <sub>3</sub>		Ammonia as N	
	Obs.	Temp	H	W	S	B	H	W	S	B	H	W	S	B
1913	S.B.	C.E.	H	W	S	B	H	W	S	B	H	W	S	B
Max. daily	0	27.6	0	0	102	102	0	0	0	0	0	0	0	0
Min. daily	0	0	10	10	38	11	4	0	0	0	0	0	0	0
Aver. daily	0	0	10	10	38	11	4	0	0	0	0	0	0	0
No. of samples	340	340	340	340	340	340	340	340	340	340	340	340	340	340
1914	S.B.	C.E.	H	W	S	B	H	W	S	B	H	W	S	B
Max. daily	0	27.6	0	0	102	102	0	0	0	0	0	0	0	0
Min. daily	0	0	10	10	38	11	4	0	0	0	0	0	0	0
Aver. daily	0	0	10	10	38	11	4	0	0	0	0	0	0	0
No. of samples	305	305	305	305	305	305	305	305	305	305	305	305	305	305
1915	S.B.	C.E.	H	W	S	B	H	W	S	B	H	W	S	B
Max. daily	0	20.34	0	0	80	10	28	0	0	0	0	0	0	0
Min. daily	0	0	2	2	22	20	0	0	0	0	0	0	0	0
Aver. daily	0	0	2	2	22	20	0	0	0	0	0	0	0	0
No. of samples	405	405	405	405	405	405	405	405	405	405	405	405	405	405

Note: H W River water from force main.

S.B. Sedimentation basin.

C.E. Combined filter effluent

D.M. Filtered water from distribution main

M. Methyl.

F.M. Ferrous.

Tr. Trace only.

TABLE NO. 5  
WATER WORKS DEPARTMENT—PURIFICATION DIVISION

## SUMMARY OF SANITARY CHEMICAL DATA (PARTS PER MILLION)

	Mineral Residue						Chlorides				Nitrogen as Free Ammonia				Nitrogen as Al- buminoid Ammonia				Nitrogen as Nitrites				Nitrogen as Nitrates				Oxygen Consumed				Dissolved Oxygen					
	Total			Non-Volatile																															Volatile	
	S.B.	C.E.		S.B.	C.E.		S.B.	C.E.		R.W.	S.B.	C.E.	S.B.	C.E.		S.B.	C.E.		S.B.	C.E.		S.B.	C.E.		S.B.	C.E.		S.B.	C.E.		S.B.	C.E.				
1913																																				
Max.....	246	251	144	145	102	106	2.8	.....	2.9	.098	.060	.400	.296	Tr.	.360	.257	21.1	9.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Min.....	189	194	97	109	82	71	0.9	.....	1.6	.033	.019	.175	.115	Tr.	.110	.075	3.5	2.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Aver.....	208	210	115	128	91	80	1.5	.....	2.1	.058	.032	.292	.193	Tr.	.223	.159	11.4	5.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
No. of Samples.....	16	13	16	13	16	13	17	0	17	16	16	9	9	16	16	16	16	16	0	16	16	16	16	16	16	0	0	0	0	0	0	0	0	0		
1914																																				
Max.....	240	240	139	141	103	105	2.5	.....	3.8	.115	.108	.353	.205	Tr.	.292	.276	17.5	7.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Min.....	187	191	90	115	82	71	1.5	.....	2.5	.011	.015	.214	.152	Tr.	.107	.083	4.0	3.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Aver.....	204	211	118	127	92	84	2.0	.....	3.2	.043	.041	.270	.186	Tr.	.192	.152	9.6	5.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
No. of Samples.....	29	29	29	29	29	29	30	0	30	30	30	30	30	30	30	30	29	29	0	30	30	30	30	30	29	29	0	0	0	0	0	0	0	0		
1915																																				
Max.....	241	241	141	141	100	100	3.0	.....	4.0	.158	.133	.335	.226	.003	.002	.281	.251	12.0	4.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Min.....	180	183	100	107	80	66	2.0	.....	2.0	.006	.006	.139	.116	.000	.000	.070	.082	4.8	3.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Aver.....	210	212	121	132	89	80	2.4	.....	3.3	.041	.035	.222	.143	Tr.	.129	.106	7.9	4.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
No. of Samples.....	20	20	20	20	20	20	19	19	19	19	19	19	19	17	17	18	18	19	15	15	15	15	15	15	15	0	0	0	0	0	0	0	0	0		

Note: R.W.—River Water from force main.  
S.B.—Sedimentation basin.  
C.E.—Combined filter effluent.  
Tr.—Trace only.

**TABLE NO. 6**  
**WATERWORKS DEPARTMENT—PURIFICATION DIVISION**  
**SUMMARY OF ANALYSES OF MINERAL RESIDUES (PARTS PER MILLION)**

SEDIMENTATION BASIN											
	K+Na	NHA	Mg	Ca	Fe	Al	HCO <sub>3</sub>	NO <sub>3</sub>	Cl	SO <sub>4</sub>	SiO <sub>2</sub>
	Potass. +Sodium	Ammon.	Magnes.	Calc.	Iron	Alu.	Bicarb.	Nitrate	Chloride	Sulphate	Silica
1913	5.9	0.11	18.6	55.7	Fe <sub>2</sub> O <sub>3</sub> +Al <sub>2</sub> O <sub>3</sub> 12.6 1.7 5.2 10		266	1.59	2.0	8.4	18.5
	1.9	0.04	6.1	34.5			0.49	1.0	6.6	11.5	
	3.0	0.07	11.7	39.4			0.88	1.4	7.4	14.5	
	10	10	10	10			10	10	10		
	Number of Samples.....										
1914	7.7	0.15	17.1	52.7	0.99	3.64	249	1.29	2.5	9.2	17.6
	3.4	0.01	9.9	34.3	0.14	0.46	146	0.47	1.5	4.7	10.1
	5.2	0.06	13.7	42.4	0.45	1.16	200	0.84	2.0	6.6	13.6
	12	12	12	12	12	12	12	12	12	12	12
	Number of Samples.....										
1915	7.7	0.20	17.1	51.4	0.58	1.01	247	1.28	3.0	10.7	15.2
	5.1	0.01	10.7	34.7	0.18	0.13	157	0.31	2.0	4.6	9.8
	6.4	0.05	13.9	42.0	0.35	0.51	198	0.50	2.4	8.0	11.7
	12	12	12	12	12	12	12	12	12	12	12
	Number of Samples.....										

TABLE NO. 6—Continued

WATERWORKS DEPARTMENT—PURIFICATION DIVISION

SUMMARY OF ANALYSES OF MINERAL RESIDUES (PARTS PER MILLION)—Continued

[illegible]

TABLE NO. 7  
WATER WORKS DEPARTMENT—PURIFICATION DIVISION

BACTERIOLOGICAL DATA																
COLONY COUNTS ON AGAR AT 37° AND GELATINE AT 20° C.																
	Raw Water		Settling Basin		Coag. Basin		Inf. to Filters		Eff. From Filters		Eff. From Plant		Distribution Main		City Taps	
	Agar	Gel.	Agar	Gel.	Agar	Gel.	Agar	Gel.	Agar	Gel.	Agar	Gel.	Agar	Gel.	Agar	Gel.
1913																
Max.	2,300	10,000	1,200	5,400	900		650				130	150	11	210	800	4,500
Min.	70	125	5	120	3		2				0	1	1	3	0	1
Aver.	645	1,565	240	395	155		85				7	11	4	24	80	215
No. of samples	196	194	599	381	599		337				599	380	36	35	341	339
1914																
Max.	2,700	5,300	1,000	8,800	1,500		1,700		2,200		155	160	170	†13,500	150	†11,000
Min.	55	250	40	150	20		4		3		0	1	0	1	2	2
Aver.	510	1,000	256	790	155		120		135		12	11	14	†	16	†
No. of samples	322	322	730	365	728		586		542		730	365	337	337	87	83
1915																
Max.	2,600	12,700	1,700	10,400	1,100		1,400		2,100		210	160	160	1,100	215	400
Min.	40	120	38	110	14		10		2		0	1	1	1	1	1
Aver.	1,710	1,720	335	860	152		135		70		8	8	7	24	14	38
No. of samples	274	274	729	364	729		720		744		728	364	241	241	97	97

†Aftergrowths in clear water reservoir.





TABLE NO. 9  
WATERWORKS DEPARTMENT—PURIFICATION DIVISION  
SUMMARY OF MICROSCOPICAL EXAMINATIONS

	DIATOMACEAE										CHLOROPHYCEAE										Cyno- phyceae	Proto- zoa	Ecti- fera	Total		
	Navicula No. per C. C.	Cyclotella No. per C. C.	Nitzschia No. per C. C.	Eucyoneura No. per C. C.	Cacconeina No. per C. C.	Asterionella No. per C. C.	Synedra No. per C. C.	Coconeis No. per C. C.	Stephanodiscus No. per C. C.	Melosira No. per C. C.	Protococcus No. per C. C.	Conferva No. per C. C.	Raphidium No. per C. C.	Spirogyra No. per C. C.	Pediastrum No. per C. C.	Ulothrix No. per C. C.	Anabaena No. per C. C.	Dinobryon No. per C. C.	Euglena No. per C. C.	Aureocera No. per C. C.					Miscellaneous No. per C. C.	Amorphous No. per C. C.
1913																										
Max.	214	1285	473	56	42	82	18	46	14	8	2	50	38	22	36	12	5	4	15	Pr.	38	340	340	170	1297	
Min.	120	40	0	12	8	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	170	640	
Aver.	176	691	240	39	28	32	10	15	4	4	13	19	3	10	2	1	2	10	8	0	12	265	1297	640	640	
Present in samples.	10	10	9	10	10	8	10	10	9	6	3	8	8	4	8	2	7	4	8	0	1	8	10	10	10	
1914																										
Max.	138	2470	459	58	39	85	12	24	15	31	5	35	18	36	18	14	5	12	2	31	1	2	26	520	520	
Min.	40	40	6	4	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	402	
Aver.	104	695	101	23	20	16	6	8	6	8	2	14	6	9	7	3	1	4	1	9	1	1	10	290	1070	
Present in samples.	35	35	35	34	35	33	34	34	34	33	19	33	33	24	31	20	10	27	10	29	13	12	33	35	35	
1915																										
Max.	238	2480	386	62	30	125	9	23	26	26	1	29	7	10	8	4	4	1	22	1	2	27	388	388	388	
Min.	69	48	5	7	6	0	0	4	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	98	
Aver.	127	317	55	21	18	20	4	11	10	11	1	11	2	4	3	1	1	1	7	1	1	9	237	506	320	
Present in samples.	43	43	43	43	43	34	40	43	43	43	25	43	31	39	26	29	24	8	4	33	4	14	43	43	43	

**TABLE 10**  
**TYPHOID FEVER STATISTICS, SUPPLIED BY MINNEAPOLIS HEALTH DEPT.**

Year	Number of Typhoid Cases	Number of Typhoid Deaths	Death Rate per 100,000 Population	Remarks
1900.....	376	79	38	
1901.....	630	121	58	
1902.....	320	66	29	
1903.....	720	95	39	
1904.....	738	103	41	
1905.....	269	62	23	
1906.....	252	97	34	
1907.....	181	77	26	
1908.....	104	51	17	
1909.....	95	59	19	
1910.....	1,252	173	57	Chlorination begun Feb 1910.
1911.....	299	36	11	
1912.....	186	37	11	
1913.....	136	41	12	Filter Plant in operation Jan. 10, 1913.
1914.....	278	38	12	Population 343,460.
1915.....	166	25	7	Population 353,460.

TABLE NO. 11  
COMPARISON OF COLOR IN RIVER WATER AT MINNEAPOLIS WITH AVERAGE MONTHLY PRECIPITATION  
ON MISSISSIPPI RIVER WATERSHED ABOVE MINNEAPOLIS †

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Summary
1913													
Average Precipitation.....	0.32	0.36	1.11	2.00	3.07	3.03	7.18	1.57	3.63	3.12	0.48	0.02	25.89
Color.....													
Max.....	17	17	38	41	51	59	108	93	71	61	50	42	108
Min.....	11	14	17	28	29	50	48	55	48	38	38	38	11
Aver.....	14	16	25	33	43	55	76	74	58	63	45	40	47
1914													
Average Precipitation.....	0.74	0.43	1.14	2.45	2.43	8.36	2.56	5.51	3.67	1.81	0.41	0.18	29.71
Color.....													
Max.....	38	23	26	42	81	1.30	124	75	60	55	40	30	130
Min.....	23	19	20	37	42	58	75	40	32	38	31	25	19
Aver.....	29	20	22	39	64	99	91	53	42	45	34	27	49
1915													
Average Precipitation.....	0.67	1.20	0.42	1.73	4.00	8.54	3.64	1.53	2.87	2.13	1.89	0.73	29.35
Color.....													
Max.....	25	23	72	42	77	75	86	55	29	47	79	60	86
Min.....	22	20	27	30	40	46	57	32	24	22	35	30	20
Aver.....	23	21	38	36	53	63	75	43	27	37	54	42	44

Note: †Precipitation data from U. S. Weather Bureau for stations at Bemidji, Cass Lake, Brainerd, St. Cloud and Minneapolis.



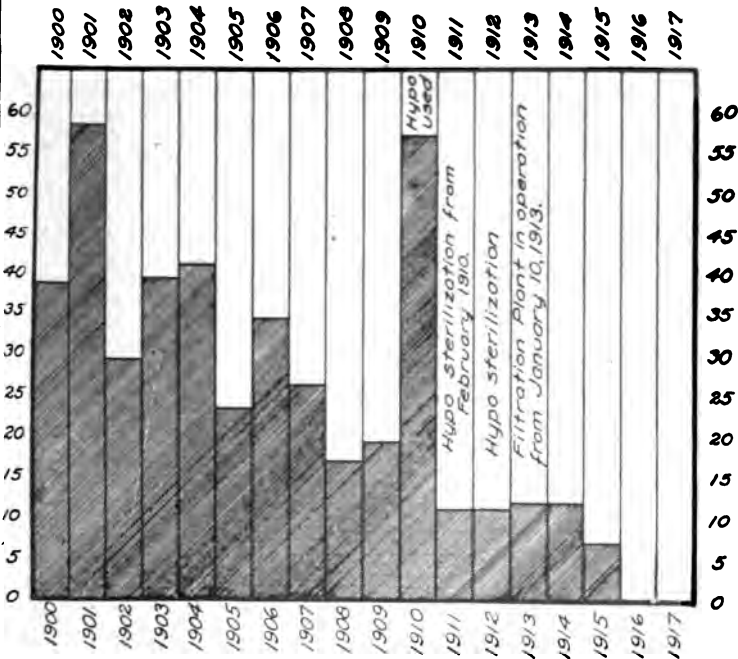
**TABLE 13**  
**REDUCTION IN COLOR PER GRAIN OF ALUM**

Year	Alum Grains per Gallon	Color Settling Basin p. p. mil.	Color Clear Well p. p. mil.	Reduction in Color Parts per Million	Reduction in Color per Grain of Alum	Number of Coagulation Basins in Service
1913:						
Maximum.....	5.62	70	29	46	14	2
Minimum.....	0.68	14	6	8	7	2
Average.....	3.47	45	18	27	8	2
1914:						
Maximum.....	6.63	91	26	65	13	4
Minimum.....	0.70	20	14	6	7	2
Average.....	3.11	46	17	29	9	3
1915:						
Maximum.....	5.20	72	16	56	14	4
Minimum.....	0.86	21	10	10	9	4
Average.....	2.63	43	14	29	11	4

CHART I.  
**CITY OF MINNEAPOLIS**  
 WATER WORKS DEPARTMENT.  
 PURIFICATION DIVISION.

F. H. Cappelen, City Eng.  
 L. L. Birdsell, Supt. Purif. Div.

*Typhoid Fever Death Rate per 100,000  
 City of Minneapolis.*



**GRADE SEPARATION.**

The work on the grade separation of the H. & D. branch of the Milwaukee road progressed nicely during the year, and the following bridges were completed:

Clinton Avenue.  
Fourth Avenue South.  
Portland Avenue.  
Oakland Avenue.  
Park Avenue.  
Columbus Avenue.  
Chicago Avenue.  
Elliott Avenue.  
Tenth Avenue South.  
Eleventh Avenue South.  
Twelfth Avenue South  
Thirteenth Avenue South.

During the year, upon advice of the legal department, preparations were made to fight the injunction proceedings commenced by the Chicago, Milwaukee & St. Paul Railway Company against the city's ordinance compelling said company to depress its main line tracks seventeen feet. Investigations were made in a great many cities throughout the country as to the various grade propositions that had been carried out and which were under construction.

Borings were made along the entire length of the right of way of the Milwaukee Railway Company's main line from Washington avenue to 24th street east, as it was expected that the suit would come up during the latter part of the year 1915. The case, however, was postponed, and will not be tried until 1916.

Several conferences were held with the Minneapolis & St. Louis Railroad Company and the Chicago, Milwaukee & St. Paul Railway Company, with reference to the construction of a new bridge over these companies' tracks on West Lake street. The old wooden structure built in 1884 was considered entirely unsafe for further use. Plans were made and adopted for a new structure of reinforced concrete with a 50-foot roadway and two 8-foot sidewalks. The old long timber trestle approaches were discontinued, and the plans provide for filling instead of trestle work. The grades were also improved, and this structure, when completed, will be of great benefit to the city.

Plans were also approved during the year for a new east approach on Broadway street to the Central avenue bridge over the Great Northern Railway tracks. This work will be commenced this winter.

A great many conferences were held during the year by the committee on Roads and Bridges and the various railway companies regarding grade separations and the reconstruction of old bridges over railroad tracks, but no definite solutions were arrived at.

**UNION DEPOT.**

In December, 1914, the City Council presented complete plans for the Union Depot, prepared by the City Engineer, to the Minnesota State Railroad and Warehouse Commission, and this commission was obliged, according to law, to hold meetings in the City Council Chamber of Minneapolis, for the purpose of discussing the plans with all the railway companies interested.

The commission gave the proper notice to the following interested railway companies:

Great Northern Railway Company; Northern Pacific Railway Company; Minneapolis, St. Paul & Sault Ste Marie Railway Company; Minneapolis & St. Louis Railroad Company; Chicago, Milwaukee & St. Paul Railway Company; Chicago, St. Paul, Minneapolis & Omaha Railway Company; Chicago, Burlington & Quincy Railroad Company; Chicago Great Western Railroad Company; Chicago, Rock Island & Pacific Railway Company; Minneapolis & Northern Railway Company; Minneapolis, St. Paul, Rochester & Dubuque Electric Traction Company; Electric Short Line Railway Company; Twin City Rapid Transit Company; Railway Transfer Company; Minneapolis Eastern Railway Company, and Minneapolis Western Railway Company, and meetings were held in February, March, April and June, together with several other meetings; and on December 14th, final argument was made and the case submitted for final consideration by the commission.

The railway companies were represented by their various attorneys, and the City, by C. D. Gould, City Attorney, and Mr. C. J. Rockwood, special attorney for the city.

The City Engineer, F. W. Cappelen, was the only witness examined during the entire period.

#### BASSETT CREEK.

The Bassett Creek conduit was continued during the year, from the center line of Bryant avenue north, to 250 feet west of west line of 10th avenue north, a total length of 1,680 feet having been built at a cost of \$68,681.89. This work was done by the Bridge Department.

#### SIDEWALKS.

Fifty-two and seventy-four one-hundred (52.74) miles of cement sidewalks were constructed at a total cost of \$139,012.67.

During 1914, the City Council instructed the City Engineer to make repairs on sidewalks without notice to the owners, and as stated in my 1914 report, this helped matters in connection with sidewalks repairs considerable.

This year your Honorable Body changed these instructions again by ordering the City Engineer to notify owners that repairs must be made and gave the owners ten days in which to comply with the order, unless absolute necessity demanded immediate repairs.

The entire sidewalk matter will never be absolutely satisfactory, until the entire construction of sidewalks be put in the hands of the City Engineer's Department.

#### CURB AND GUTTER.

Seventy-three and five tenths (73.5) miles of artificial curb and gutter was constructed during the season at a cost of \$132,895.16; and 1.156 miles of curb was moved, at a cost of \$853.04. Repairs of curbing cost \$2,005.07.

#### COLLECTION AND DISPOSAL OF GARBAGE.

Up to January 1, 1915, the collection and disposal of ashes and garbage had been under the direction of the Commissioner of Health. By resolution of the City Council, the collection and disposal of garbage and ashes was turned over to the City Engineer, January 1st, but the actual change was not put into effect until March, 1915.



A brief history of the matter of garbage disposal may be of interest. In the early days, most of the garbage was disposed of by dumping into the Mississippi river at certain places. In 1888, a small Engle crematory was erected, and incineration of garbage and dead animals was commenced. This crematory burned down in 1889, and dumping was again adopted. This method, and disposal by contract by hauling on railroad cars to points outside of the city, was continued until incineration was again adopted in 1901, when an incinerating plant consisting of two De Carie furnaces of fifty tons normal capacity each, was installed at the Workhouse grounds in the extreme north-westerly end of the city.

On September 15, 1905, the buildings were destroyed by fire; the incinerators themselves remaining unharmed. A temporary structure was built around the incinerators, out of the \$2,500.00 insurance money. There was no interruption in the service of the collection of garbage. On July 30th, 1906, a second fire destroyed the temporary structures; the incinerators still remaining unharmed.

Following the first fire, the plan of handling the long haul from the city, by means of railroad transportation, was taken up with the Soo Road, and after many conferences a plan and price was agreed upon, and a contract entered into with the Soo Line Railroad in January, 1907.

In the meantime, money was appropriated by the City Council to rebuild the crematory. In December, 1905, a committee was appointed to visit various plants throughout the United States, and in their report it was agreed to utilize the burning of garbage to produce steam by means of an auxiliary boiler, for the purpose of lighting and possibly heating the city workhouse, in connection with the operation of the machinery necessary at the plant. The estimates at this time showed that this could be done.

The question of carrying this into effect was taken up by the Board of Charities and Corrections (which controls the workhouse) soon afterward.

The city workhouse buildings have all been lighted since January 26, 1908, by electricity generated at the crematory.

During the summer of 1908, the transfer point at Plymouth avenue and 1st street, which was made necessary from the change to railroad transportation, was adopted.

In the fall of 1908, steam lines to the city workhouse, Old Hope-well Hospital, greenhouse, and the superintendent's residence, were laid, supplying steam from the crematory, running under ground across a field, to each building, about 2,500 feet in length, each, as follows:

One 8-inch pipe at 5-pounds pressure; one 3-inch pipe at 70-pounds pressure; one 3-inch pipe at atmosphere, to return all water from condensation back to the crematory. In connection with this, each building has 40-pound pressure for cooking, washing, sterilizing and operation of pumps, for heating purposes.

In the fall of 1909 a small Heine boiler was replaced by a 333 H. P. Wickse boiler.

In the summer of 1911, an appropriation of \$60,000.00 was allowed to install electric equipment to supply current for 150 street lamps in the 10th ward. The equipment consists of two 16x36 Hamilton Corliss engines direct connected to two 186 K. V. A. 2,300 volt A. C. generators. One only, Chuse 10x12 high speed engine, direct connected to a 50 K. V. A. 2,200 volt A. C. generator. Four 6.6 amp., 50 light General Electric Co., mercury arc rectifier sets. A three panel switch board. One motor generator to operate an auxiliary exciter, and a 20 K. W. 220 volt generator for power for crane service. And in June, 1912, the 150 street arcs were put in operation.

On April 20, 1912, the New Hopewell Hospital (100 beds) was opened to the public, the crematory furnishing light, heat and power to it.

The following year an additional 50 street arcs were installed, and at different times 12 more were installed, making a total of 212 street arcs now in operation in the 10th ward, from the crematory plant.

In the summer of 1913, an overhead tramway with electric hoist was installed at Blaisdell avenue and 29th street. The collecting tanks from this neighborhood were loaded on trailer pulled by a Knox tractor, and hauled to the incinerating plant direct. This method was not satisfactory on account of bad roads and very bad winter conditions.

In 1914, an additional 225 H. P. high pressure boiler was installed. There was also put up a new 200-foot concrete stock, in place of the old 80-foot one.

These installations were all made under the direction of the City Engineer.

#### REPORT OF THE CITY ENGINEER FOR 1915.

Although the Health Department had had the benefit of the advice of the Research Committee of the Minneapolis Civic and Commerce Association, this department (City Engineer) saw, that by a change in the collection system, a considerable saving could be accomplished—and a much more prompt collection from householders could be made, avoiding a great many complaints that were previously lodged against the Department of Health.

The city was previously divided into thirty-four collection districts, and the garbage was hauled directly from these districts to the central loading station at Plymouth avenue and the Soo railway tracks. This made some very long hauls for a part of the wagons. By establishing three sub-stations; one at the sewer yard at Cedar avenue and 26th street; one at Blaisdell avenue and Elroy street, and one at the water works yards at 5th avenue southeast and 9th street, the collecting teams would haul the tanks into these various sub-stations; and from these sub-stations a single team could haul two loaded tanks, using one as a trailer, and deliver the garbage to the central station at much less cost, thus leaving the necessary number of teams collecting all the time, and one-half the number of teams used before to take care of the delivery to the central station. This method was inaugurated at once with very gratifying results.

During 1915, a steel tramway, under which the garbage trains are placed for unloading the garbage tanks and delivering the garbage by electric traveling crane to the furnaces, was enclosed, and a concrete floor put in place so as to be able to handle everything in a sanitary manner, and preventing paper to be carried around the neighborhood from the tanks.

A contract for a new fifty ton De Carie incinerator, was also let, and the incinerator was partially installed, but not quite finished during the year.

**Wages:** The Chief Engineer at the incinerating plant receives \$150.00 per month; linemen, \$75.00 per month; helpers, \$65.00 per month; assistant superintendent, \$100.00 per month; arc light system linemen, \$100.00 per month; lamp trimmer, \$85.00 per month; light plant engineer, \$90.00 per month.

Superintendent of garbage collection, \$150.00 per month; teams, \$110.00 per month; collection helpers, \$2.25 per day; cranemen, \$3.00 per day.

It might be interesting to state, that after this department got everything in running shape, we very seldom had any complaints whatever, and that before the change was made, complaints ran as high as 80 per day.

## GARBAGE COLLECTION REPORT—MINNEAPOLIS, MINN., 1915.

Summary.		Per ton.
Teams .....	\$40,411.94	2.018
Helpers .....	9,773.06	.488
Superintendent .....	1,750.00	
Clerk .....	532.34	
Engineer .....	951.35	.14
Auto maintenance .....	474.40	.0237
Telephones .....	57.30	
Water and ice .....	34.48	
Power and light .....	68.99	
Supplies and repairs .....	660.00	.0332
New wagons .....	1,367.00	.0624
New tanks .....	317.28	.0453
Canvas covers .....	223.44	.0112
Repairing tanks .....	1,839.13	.0919
Painting tanks .....	972.82	.0486
Repairs on wagons .....	528.24	.0263
Repairs on tramway .....	610.03	.0300
New building, 4% on \$1,146.61 .....		4% on .0572
Paving, 4% on \$375.15 .....		4% on .0215
Total of two above .....	63.11	(total of two above) .0031
Total cost of collecting and delivering on railroad cars for 20,025 tons .....		
	\$61,266.91 or, per ton	3.0338
*Switching .....	7,142.00 or, per ton	.393
Total cost of collecting and delivering from Central Station to Incinerating Plant .....		
	\$68,428.91 or, per ton	3.4268

\*Switching means hauling of loaded railroad cars from Central Station to Incinerating Plant, about four miles.

There were collected and dumped 2,490 loads of ashes during January, 1915, at a cost of \$3,521.91. Collection of ashes was then discontinued by the city.

## COST OF INCINERATION OF GARBAGE, MINNEAPOLIS, MINN., 1915.

Payroll .....	\$21,924.75
Coal .....	12,666.08
Telephone .....	105.00
Water .....	330.06
Wood .....	89.45
Insurance .....	167.95
Supplies and repairs .....	3,137.17
Total operating expense .....	\$38,420.45
Revenue from heat to workhouse and Hopewell Hospital .....	\$11,248.18
Revenue from light to hospital .....	1,032.32
Revenue from light to workhouse .....	532.62
Revenue from city arcs, less dockage of \$63.53 .....	12,656.47
Total revenue .....	\$25,464.59
Total operating expense .....	\$38,420.45
Total revenue .....	25,464.59
Net operating expense .....	\$12,955.86
Number of tons burned .....	23,960
or per ton $\frac{12,955.86}{23,960} =$ .....	54.07 cents per ton
Interest and depreciation on Incinerating Plant proper, 6½% on \$50,000.00—\$3,250.00, or per ton, $\frac{3,250.00}{23,960} =$ .....	13.56 cents per ton
Interest and depreciation on light plant, 8% on \$60,000.00—\$4,800.00, or per ton $\frac{4,800.00}{23,960} =$ .....	20.03 cents per ton
	87.66
Cost of labor handling garbage from train to furnace, and current to operate crane and lights for this purpose, was:	
Current .....	\$1,750.00
Labor .....	1,750.00
	\$3,500.00 or per ton 14.73
Therefore, actual cost of incineration per ton was 54.07 minus 14.73, or .....	39.34 cents

The incinerating plant receives three cents per kilowatt hour for light furnished to the workhouse and hospital; and six mills per horse power at thirty pounds for heating.

The arc lights are 5.95 amperes and have 90 volts in each arc, for which the plant receives \$60.00 per annum.

The plant operates 212 arcs for street lighting in the territory in which it is located, amounting to 15 miles of streets.

#### CIVIL SERVICE COMMISSION.

The Civil Service Commission is handling matters very much better than last year, and we are getting along with very little friction.

An attempt to have the law abolished was made during the Legislature of 1915. Such attempt was unsuccessful, as it must be considered as a general proposition, that civil service is a good thing.

#### MUNICIPAL ICE PLANT.

During the general election of 1914, the voters of Minneapolis went an record approving an ordinance to establish a Municipal Ice Plant; or rather giving the City Council authority to establish a Municipal Ice Plant, if, in its wisdom, it desired to do so.

On January 8th, the City Engineer was directed to make a thorough investigation in regard to harvesting, storing and delivering natural ice; and also to investigate the cost of artificial ice delivered to the consumer. Also to make a report on the different kinds of artificial ice plant systems, and the following report was submitted:

"I beg to report herewith that I visited a number of artificial ice plants in various cities and investigated the cost of the construction of artificial ice plants, and also as estimated by different manufacturers of such plants.

I also investigated the cost of harvesting, storing and delivering natural ice in various localities, together with Minneapolis, and I find that the cost of such ice delivered to the consumer and the cost of the equipment and plants to handle the same, is as follows:

These figures are based on the manufacture and delivery of 100,000 tons of ice per year. It will be readily seen that this amount of ice would not supply the whole City of Minneapolis, and it would require at least twice, or probably two and one-half times such an amount of ice to supply the whole city.

#### THE COST OF NATURAL ICE WOULD BE AS FOLLOWS:

Cost of storage houses, 100,000 tons.....	\$125,000.00
	Cost per Ton
Delivery to storage.....	\$0.30
Loss .....	.04
Out of storage onto platform.....	.15
Interest, 6% on \$1.25 per ton.....	.075
Depreciation .....	.125
Taxes, 2% .....	.025
Insurance, 3% .....	.085
Amortization (3%) .....	.042
Total cost on platform or car.....	\$0.792
Freight .....	\$0.40
Shrinkage .....	.132
From car into wagons.....	.25
Total cost per ton on delivery wagons.....	\$1.574
Delivery and shrinkage.....	2.75
Overhead, 10% .....	.432
Total cost delivered .....	\$4.756

## Cost of Artificial Ice, 100,000 Tons Yearly Capacity.

Cost of plants.....	\$400,000.00
6,000 tons of refrigerator storage.....	60,000.00
Land .....	20,000.00
<b>Total .....</b>	<b>\$480,000.00</b>
	<b>Cost per Ton</b>
Manufacturing cost .....	\$1.00
Interest, 6% .....	.288
Insurance, 1% .....	.049
Repairs .....	.192
Taxes, 2% .....	.096
Amortization, 3½% .....	.160
<b>Total cost on platform per ton.....</b>	<b>\$1.785</b>
Delivery and shrinkage.....	\$2.642
Overhead .....	.442
<b>Total cost per ton, delivered.....</b>	<b>\$4.869</b>

The investment in a delivery plant equipment in either case would be \$1.00 per ton per year, or \$100,000 for the delivery of 100,000 tons of ice per year.

The costs per ton as shown above would be for an average delivery. By this, I mean that the large deliveries would be taken in connection with the small deliveries. If a plant were so situated that the delivery was scattered, it would increase the cost per ton quite materially—and if the delivery were made in large quantities to large consumers, the price naturally would be considerably less as well as the delivery, but this would affect the average cost per ton.

The delivery cost on an artificial ice as shown above is somewhat less than the delivery cost on a natural ice, which would be accounted for by the better location of the plants, requiring shorter routes, and also less shrinkage of ice.

I have shown above that it would require plants of a rated capacity of 400 tons per day to supply this artificial ice. These plants would preferably be made in units of probably 100 tons, or perhaps 200 tons, having them located in different parts of the city to accommodate the consumers and thereby cutting down the cost of delivery.

I investigated the different kinds of artificial ice manufacturing plants, and find that probably the best kind of plant for Minneapolis would be what is called the ordinary "Raw Water Can" plant, and the manufacturers of these different kinds of plants will guarantee the price of production of their plants.

I also investigated the prices of ice delivered in other cities; and one large artificial plant in particular in Brooklyn were charging for ice delivered on the platform \$4.00 per ton, and they thought that they could reduce the price, and did reduce the price to \$2.00 per ton—and the manager of the plant said he was losing money at this price.

The climatic conditions in Milwaukee are somewhat similar to the conditions in Minneapolis in the storage of natural ice and the deliveries of ice, and I found that the prices in Milwaukee were approximately 25 per cent higher there than in Minneapolis.

From the above estimates you can see that it would require to furnish the City of Minneapolis entirely with artificial ice, based on 200,000 tons per year, an investment of \$960,000, for an ice manufacturing plant, and \$200,000 for the delivery plant, making a total of \$1,160,000, for this character of plant.

Although your committee went on record recommending artificial ice for the City of Minneapolis, I beg to state that from the figures before presented you will see that the total investment for a natural ice proposition for 200,000 tons of ice per year will be \$250,000, for the storage house, and \$200,000 for delivery plant, making a total investment of \$450,000 for a natural ice plant.

In arriving at the above figures for an artificial ice plant, I beg to call your attention to the fact that peak load for demand has governed the calculations.

In my investigation I find two very exhaustive reports on the ice situation made recently; one was to the president of the Borough of Manhattan, Greater New York, which report shows that there is only one small municipal ice plant in the United States.

This report also included the report made by the City Engineer of St. Paul to the City Council of St. Paul, and in my opinion this report was the best of all the reports referred to in said document.

No definite recommendations of any kind were made in the New York report in the establishment of a municipal ice plant for Greater New York.

The other report referred to was a report made by an expert engineering company of Lynn, Mass., to the State Department of Massachusetts, involving the entire state of Massachusetts, and taking up the question of the supposed high cost of ice in the state. This report rather recommends the use of artificial ice, and the figures submitted in said report check very closely with the figures submitted above.

It might be interesting to inform you that in other cities where the coupon system is in use (and I might say here that the coupon system is the proper system) and the system is such that any amount of ice to be delivered is covered by coupon, that is, coupons can be given for any weight of ice delivered, thereby eliminating the question of short weight.

I might also state that in the east in a great many places, the ice companies simply furnish the ice on the unloading platform subject to purchase by retailers and wholesalers that afterwards make their own delivery, and under such conditions the City would reserve the right to regulate the price of ice to consumer."

Later on, the City Engineer also reported that the cost of an artificial ice plant of 100 tons daily capacity, ready for operation and fully equipped for delivery of 100 tons of ice per diem. would be \$145,000. Furthermore, that this plant when put into operation would be under a daily expense of practically \$500.00, and that it therefore would be absolutely necessary that a working capital be provided for, of at least \$25,000.0.

This entire question was considered for quite a while by Your Honorable Body, but as opinions on the subject were quite divided the entire matter was laid over for future consideration.

#### MINNEAPOLIS STREET RAILWAY VALUATION.

On August 27th, Your Honorable Body ordered the City Engineer to make a physical valuation of the properties of the Minneapolis Street Railway Company, and to include in such valuation, a Fair Going Concern Value, but not to include any Franchise or Good Will Value in such valuation.

According to these instructions, the following organization was perfected, and work commenced and continued during the year.

W. R. Goodwin, Assistant Engineer in this department, with five men, in charge of track work and paving; Mr. G. W. See, outside wire inspector of this department, with five men, on the overhead trolley work and electrical equipment; and J. W. Shaffer with four men in charge of underground work; and Mr. W. N. Jones and Mr. F. H. Nelson, with four men in charge of buildings.

Of course it will take all of next year to complete the work.

**LABOR.**

To help out the unemployed men after the real season's work closed, attempts were made to do all possible work that could be carried out, even at a disadvantage, to assist them.

Labor conditions generally, were good, and no trouble was encountered from the local labor unions—outside of a little disagreement with the Iron Worker's Union, on account of some minor demands made by them, which were finally peacefully settled.

**UNDERGROUND CONDUITS.**

During the year, 12.28 miles of conduit, with 52.69 miles of ducts were laid by the various public service corporations, making a total number of conduits in the city, of 312.85 miles, with a grand total of ducts, of 1542.1 miles.

The necessity for tearing up our streets to permit the public service corporations to place conduits is becoming a very serious one.

Upon request of the corporations the Aldermen of the various wards would grant the corporations permission to open the streets. This permission would then be ratified by the Committee on Underground Wires; and upon this committee's recommendation, would be approved by the City Council. This method did not give the City Engineer's department a chance to investigate the merits of the original request. This procedure was changed on the 10th day of December, in this way; that all requests for opening of streets and avenues, for excavation purposes, be approved by the City Engineer before any permits were granted. This was a step in the right direction, and it is hoped that still further safeguarding newly paved streets be adopted in the future.

**GOVERNMENT HIGH DAM AND RIVER TERMINALS.**

During the extreme high water in the spring of the year, a part of the large coffer dam at the High Dam went out, thus delaying the government work considerable.

The Harbor Wall for the City River Terminal was completed at the total cost of, for the Harbor Wall proper, \$25,928.01. In addition to this work some grading was done, amounting to \$292.46; and the river bottom, as far as possible, in front of the Sea Wall was dredged down to give a six-foot channel, at a cost of \$7,217.30. Incidentals, including committee attendance at Navigation Convention, etc., and land commissioners' expense, \$1,091.19; making the total expenditures for the year for improvements \$34,528.96.

In addition to this work, the city obtained title to the following lands for terminal purposes: All of block 164; block 173, except lot 3; part of block 174, all in City of Minneapolis; and west half of block 9, Washington avenue addition. This land was acquired at the total cost of \$26,608.16, with some addition claims pending—now in the hands of the court.

The total expenditure for the year thus \$61,137.12; and if we include the 1914 expenditure of \$31,713.17, we have a total outlay on the Minneapolis River Terminals, of \$92,850.29.

**PURCHASING DEPARTMENT.**

The Purchasing Department, as has been previously reported, has been giving excellent service; always looking after the city's interest in the purchase of equipment and materials.

The contract price for cement for the year was \$1.20 per barrel, net, f. o. b. cars Minneapolis, with two cents discount for cash. As we felt sure that the cement price would be advanced considerable for the year 1916, and as we had about 30,000 barrels not used of the 1915 contract, it was deemed advisable to rent a warehouse on track and store the 30,000 barrels at the 1915 price. A warehouse was rented in the center of the city on the Chicago, Milwaukee & St. Paul Railway Company's tracks, from December to July 1st, at the price of \$150.00 per month and the cement was stored. This was a good stroke of business, as it developed in 1916 that the price of cement was raised to \$1.56 per barrel, net. About \$10,000.00 was saved.

The following are some of the contract prices for material during the year:

#### CONTRACT PRICES ON MATERIALS.

1. Yellow pine creosoted wood blocks—3¼-inch, \$1.32¼ square yard; 4-inch, \$1.49¼ per yard; one-half of 1% discount, 10 days after receipt of material.
2. Vitrified paving blocks—\$1.06 square yard, f. o. b. cars, Minneapolis, net.
3. Crushed gravel and crushed limestone—\$1.00 cubic yard at the crusher; 1% discount, 10 days after receipt of material.
4. Asphaltic cement—\$15.16, f. o. b. cars, Minneapolis, in wood packages, and 2% discount.
5. Washed sand for Third avenue bridge, 75c cubic yard, f. o. b. bridge trestle over bins; 1% discount, 10 days after receipt of material.
6. Trap rock for Third avenue bridge—\$1.45 cubic yard, f. o. b. bridge trestle over bins; 1%.
7. Deformed steel bars, ranged from \$1.429 on January 10th, to \$2.079 on December 29th, all f. o. b. cars, Minneapolis; one-half of 1% discount.
8. Cement—\$1.20 per barrel, net, f. o. b. cars, Minneapolis, and .02 barrel discount.
9. Special castings (water works)—\$43.90 per ton delivered on ditch; one-half of 1%.
- 9a. Special castings (sewer department)—\$23.25 per ton delivered on ditch; one-half of 1%.
10. Cast iron pipe (water)—30-inch and 36-inch, \$24.75; 24-inch, \$24.65 per ton, f. o. b. cars, Minneapolis; one-half of 1%; 6-, 8-, 12- and 16-inch, \$23.50 per ton, f. o. b. cars Minneapolis; one-half of 1%.
11. Water valves—6-inch, \$9.00; 8-inch, \$14.00; 12-inch, \$27.60; 16-inch, \$57.80, f. o. b. Minneapolis; 2% discount.
12. Hydrants—\$32.80, f. o. b. Minneapolis; 2% discount.
13. Vitrified clay sewer pipe—All 2% discount:
 

6-inch,	8.5c	per foot, delivered on ditch, single strength.
9-inch,	17.1c	per foot, delivered on ditch, single strength.
12-inch,	32.5c	per foot, delivered on ditch, double strength.
15-inch,	45.4c	per foot, delivered on ditch, double strength.
18-inch,	67.5c	per foot, delivered on ditch, double strength.
20-inch,	86c	per foot, delivered on ditch, double strength.
22-inch,	98c	per foot, delivered on ditch, double strength.
24-inch,	\$1.16	per foot, delivered on ditch, double strength.
27-inch,	1.60	per foot, delivered on ditch, double strength.
30-inch,	1.90	per foot, delivered on ditch, double strength.
33-inch,	2.66	per foot, delivered on ditch, double strength.
36-inch,	3.00	per foot, delivered on ditch, double strength.
14. Hard burned sewer brick—\$7.75 per f. o. b. Minneapolis, 25M.
15. Youghiogheny lump coal (on B. T. U. 62719 B. T. U. 1 cent)—\$4.74 per ton, delivered by team; 2% discount.
16. Youghiogheny screenings (on B. T. U. 84177 B. T. U. for 1 cent)—\$3.35 per ton, f. o. b. cars; 2% discount.
17. Road oil—\$0.0288 per gallon, f. o. b. cars, Minneapolis.



**TABLE NO. 1**  
**INVENTORY OF PERMANENT PUBLIC IMPROVEMENTS JANUARY 1,**  
**1916 CONSTRUCTED BY OR IN CHARGE OF THE CITY**  
**ENGINEER'S DEPARTMENT.**

	Cost	Total Cost
Pavements on streets, alleys and bridges.....		\$8,311,109.68
Curb and curb and gutter .....		1,870,467.35
Sewer and sewer tunnels .....		10,325,118.72
Water mains .....		6,363,708.98
Water works plant .....		1,232,532.70
Water works plant, reservoir and pipe lines.....		783,332.81
Water works plant filtration.....		964,001.92
<b>Bridges—</b>		
Over Mississippi river.....	\$1,685,923.60	
Over Basset's creek.....	140,174.43	
Over Graham creek.....	651.54	
Over University creek.....	15,084.67	
Over Rhingle creek.....	16,324.84	
Over Minnehaha creek.....	113,564.42	
Over Bridal Veil creek.....	461.72	
Over Webber creek.....	135.00	
Over Mill Co.'s canal .....	10,004.52	
Over Tuttle creek.....	1,000.00	
Over Horse Shoe lake.....	331.16	
Over Calhoun and Lake of Isles canal.....	110,637.82	
Over and under railroads.....	1,579,302.11	
		3,679,645.73
Municipal subway .....		14,004.50
Crematory .....		80,000.00
<b>Total .....</b>		<b>\$33,623,922.57</b>

**TABLE No. 2**  
**AMOUNT AND COST OF LUMBER USED UNDER THE DIRECTION OF THE**  
**CITY ENGINEER'S DEPARTMENT DURING SEASON OF 1914**

Wards	Total Feet	Cost
First.....	3,085	\$64.30
Second.....	33,822	714.02
Third.....	22,135	473.47
Fourth.....	25,376	551.54
Fifth.....	7,800	168.69
Sixth.....	1,920	40.45
Seventh.....	30,000	624.06
Eighth.....	24,000	506.00
Ninth.....	30,039	624.87
Tenth.....	32,980	698.80
Eleventh.....	17,779	374.65
Twelfth.....	15,201	741.15
Thirteenth.....	113,639	2,377.23
<b>Total.....</b>	<b>357,776</b>	<b>\$7,959.23</b>
Sewers.....	238,330	\$5,871.47
Bridge and bridge repairs.....	1,074,141	24,376.63
Oak lumber for bridge repairs.....	5,472	153.12
Artificial curb and gutter.....	39,171	1,191.25
Paving.....	75,065	1,574.36
Special Street improvements.....	29,371	530.76
Sea wall.....	6,872	175.57
Street railway valuation.....	573	12.91
New Hawthorne av warehouse.....	45,287	959.29
<b>Total.....</b>	<b>1,514,282</b>	<b>\$34,845.36</b>

**TABLE No. 4**  
**EXPENDITURES FOR PUBLIC IMPROVEMENTS UNDER THE DIRECTION**  
**OF THE CITY ENGINEER FROM JANUARY 1, 1914,**  
**TO JANUARY 1, 1916**

Engineer's department pay rolls.....	\$48,808.42	
Printing and stationery.....	1,022.31	
Instruments and tools.....	2,291.03	
General expenses.....	757.17	
		<b>\$52,878.93</b>
<b>Bridges—</b>		
Bridge repairs.....	20,304.96	
New bridges (bridge bonds).....	341,549.39	
		<b>361,854.35</b>
<b>Sewers—</b>		
Construction and sewer bond fund.....	\$477,307.00	
Old sewers.....	44,772.21	
Sewer and water house connections (H. C.).....	5,440.92	
Sewer and water house connections (I. & E.).....	16,640.02	
Sewer intersections.....		
Engineer's permits.....	832.00	
Special sewer connections account Marshall st.....		
Personal injuries.....	52.50	
Covering Bassett's creek.....	68,681.89	
Warehouse E 26th st (special P. I. bond, 1913).....	2,890.69	
Bond sale expense account (S. T. bond).....	66.93	
Bond sale expense account (Bassett creek bond).....	27.58	
		<b>616,711.74</b>
<b>Paving—</b>		
New.....	\$241,516.38	
Paving repairs.....	18,273.54	
		<b>259,789.92</b>
<b>Curb and Gutter—</b>		
New.....	\$128,333.17	
Curb Repairs.....	128,333.17	
Curb repairs.....	2,005.07	
		<b>130,338.24</b>
		<b>\$1,421,573.18</b>
<b>Wards—</b>		
Street funds.....	\$362,360.11	
Sprinkling.....	225,514.47	
New sidewalks.....	47,886.48	
Repairing sidewalks.....	20,456.66	
		<b>656,217.72</b>
<b>Miscellaneous—</b>		
Refund on permits.....	844.91	
Sidewalk inspection.....	5,341.79	
Sidewalk intersections.....	10,078.48	
General expense county auditor's descriptions.....	6,839.70	
New street signs.....	1,783.50	
Special street improvement No. 144.....	23,971.19	
Asphalt plant.....	302.38	
Bridge watchmen.....	5,829.48	
Street railway valuation (appraisal bond).....	5,686.86	
Bond sale expense (R. T. bond).....	94.95	
Bond sale expense (appraisal bond).....	104.82	
Bond sale expense (bridge bonds).....	48.38	
Bond sale expense (special P. I. bond, 1913).....	46.87	
Personal injuries.....	1,800.00	
Engineer's automobile.....	840.68	
Hawthorne av warehouse.....	8,010.00	
Moving curb (P. I. bond, 1913).....	72.12	
Moving curb (P. I. bond, 1913) Crystal lake.....	63.70	
Sea wall (river terminal bond).....	34,528.96	
Paving P. I. bond, 1913.....	2,786.27	
Special street improvements.....	332,520.46	
		<b>441,595.50</b>
		<b>\$2,519,386.40</b>

TABLE No. 5  
STATISTICS OF THE CITY BY WARDS, JANUARY 1, 1918

WARDS	Area in Square Miles	Population Census 1910	Population Per Square Mile	MILES OF STREETS					Miles of Stone Walk	Miles of Sewers	Miles of Water Mains	No. of Sewer Connections	No. of Water Connections
				Miles Traveled	Not Graded	Graded	Paved	Total Miles					
								Paved Av. 27 ft. Roadway					
First.....	2.49	19,760	7,936	4.59	5.01	22.45	6.72	38.77	34.98	15.05	22.27	1,205	2,557
Second.....	4.31	19,458	4,522	8.63	16.68	23.08	9.38	57.77	56.95	30.73	40.59	2,430	3,870
Third.....	3.41	40,811	11,968	6.02	8.99	38.33	17.02	70.30	121.23	51.33	56.90	5,123	7,054
Fourth.....	4.96	31,089	10,272	8.47	8.89	26.69	25.65	69.70	82.07	39.63	51.19	3,552	6,416
Fifth.....	1.98	35,153	24,430	.....	.....	10.80	19.91	30.41	51.95	23.59	30.86	2,822	5,326
Sixth.....	2.73	25,654	21,707	.....	.....	9.71	4.02	13.73	22.63	10.38	11.93	1,011	2,383
Seventh.....	2.73	25,654	6,329	7.00	17.41	34.71	3.52	62.53	66.32	31.01	36.47	3,497	7,483
Eighth.....	4.02	28,937	10,369	2.21	5.33	26.54	17.45	64.53	11.22	32.22	63.98	5,493	4,440
Ninth.....	6.18	28,832	8,636	20.00	35.60	26.01	5.01	134.94	73.22	35.21	46.29	2,313	3,323
Tenth.....	5.88	21,781	3,701	20.25	37.82	20.51	3.47	93.72	37.52	31.32	41.41	2,303	3,323
Eleventh.....	1.01	21,051	19,852	.....	.....	19.50	2.76	23.17	32.16	14.32	20.41	1,451	3,092
Twelfth.....	7.28	25,249	3,468	20.77	58.88	48.32	2.76	130.73	46.11	28.35	61.00	1,451	3,092
Thirteenth.....	8.86	25,063	2,829	20.73	49.80	56.35	2.97	129.98	66.98	20.05	72.41	1,554	5,853
Total.....	53.29	358,042	Av. 6,718	118.67	247.50	395.04	120.22	881.43	803.61	389.11	556.10	37,118	80,003

\*Exclusive of macadam and paving in alleys.

TABLE No. 5—Continued  
STATISTICS OF THE CITY BY WARDS, JANUARY 1, 1916

WARDS	Miles of Street Car Tracks Single Line	Valuation Real and Personal 1915	Valuation Per Capita Census 1915	Rate of Taxation for Ward Fund 1914 Mills	Amount of Tax Levy for Ward Fund 1914	Miles of Sprinkled Streets	Miles of Sidewalk Ordered 1914	Street Lighting			Building Permits	
								No. of Lights		Cost	No.	Valuation
								Electric	Gas			
								Orna-mental	Are			
First.....	8.05	\$5,275,154	\$207.00	2.50	\$13,303.60	18.70	.....	28	221	\$13,990.25	164	929,340
Second.....	15.45	12,976,930	666.00	2.00	26,437.27	24.77	.....	36	302	24,020.15	281	978,465
Third.....	13.87	14,113,414	346.00	2.25	31,809.16	49.27	.....	151	335	41,221.18	621	938,305
Fourth.....	24.65	66,833,130	1,626.00	1.35	90,250.44	41.85	.....	440	777	47,430.51	495	2,493,570
Fifth.....	11.61	34,924,360	1,036.00	1.65	57,639.70	28.20	.....	197	539	23,735.22	269	1,752,890
Sixth.....	3.96	5,896,237	379.00	2.00	11,792.47	12.00	.....	89	96	9,504.05	82	159,080
Seventh.....	12.64	5,975,172	239.00	2.50	14,952.95	32.36	.....	12	204	20,444.47	613	10,933,05
Eighth.....	20.09	20,707,662	495.00	2.50	51,799.88	60.55	.....	23	231	37,247.32	747	2,601,615
Ninth.....	13.52	6,795,823	237.00	2.50	17,053.97	27.88	.....	9	278	22,409.85	470	565,095
Tenth.....	12.61	5,097,181	262.00	2.50	14,242.95	20.13	.....	21	291	17,723.84	719	665,930
Eleventh.....	7.59	3,514,183	175.00	2.50	8,785.46	18.84	.....	64	123	13,488.18	198	253,595
Twelfth.....	20.91	6,189,299	245.00	2.50	15,541.31	11.50	.....	20	298	19,905.63	1,077	1,224,115
Thirteenth.....	20.69	12,535,853	500.00	2.50	31,360.15	43.20	.....	.....	326	21,072.58	1,095	2,664,635
Total.....	185.64	\$201,434,378	\$562.00	.....	\$384,969.31	389.25	25.70	1,039	3,064	\$812,193.23	6,831	\$16,349,940



TABLE No. 8—Continued  
SUMMARY OF ALL PAYMENT IN THE CITY, JANUARY 1, 1914

Kind	Where Laid	SQUARE YARDS AS SHOWN BY WARDS BELOW										Total Square Yards	Cost	Miles of Streets and Alleys	Miles of Av. 27 ft. Road-way
		1st Ward	2nd Ward	3rd Ward	4th Ward	5th Ward	6th Ward	7th Ward	8th Ward	9th Ward	10th Ward	11th Ward	12th Ward	13th Ward	
Concrete.....	Streets.....			79,482	14,922				5,174	26,509				32,402	158,489
	Alleys.....			1,794					7,792						9,586
	St. Ry.....		5,604	1,226				7,984			14,303	1,716			30,533
	Total.....		5,604	82,502	14,922			7,984	12,966	26,509	14,303	1,716			941,664.19
Granite Blocks.....	Streets.....			15,794	18,081	24,214	36,431	2,214			42,906				139,642
	Alleys.....			703		3,891	876								5,470
	St. Ry.....	19,337	35,417	20,056	58,629	50,469	8,250	23,770	50,703	33,336	13,533	26,112	22,519	10,074	372,205
	Total.....	19,337	51,914	38,137	86,734	87,776	10,464	23,770	50,703	33,336	56,441	26,112	22,519	10,074	517,317
Macadam.....	Streets.....	54,086	27,162	144,508	1,151	49,904			10,640		15,079			54,163	356,893
	Alleys.....								1,074						1,074
	St. Ry.....														
	Total.....	54,086	27,162	144,508	1,151	49,904			11,714		15,079			54,163	357,967
Sandstone.....	Streets.....		12,049	175,390	29,700	3,354	20,061			773	1,706	731			243,764
	Alleys.....			692	2,170	2,019									4,781
	St. Ry.....	586	2,957	21,296	8,918		1,568			4,576					39,903
	Total.....	586	15,006	197,280	40,788	5,373	21,629			5,349	1,706	731			288,448
Grand Totals.....	Streets.....	227,547	299,704	674,879	658,231	602,565	120,934	95,212	344,170	217,100	141,731	108,089	76,662	111,539	3,678,663
	Alleys.....														83,311
	St. Ry.....														109,658
Miles of Av. 27 ft. rdw.....		14,365	18,921	42,808	41,555	38,040	7,634	6,011	21,728	13,708	8,948	6,894	4,840	7,060	232,238

OF 1915  
All assessable property

on and parts along property exempt from special assessment is paid  
with interest at five per cent per annum

Street	Cost per Square Yard	Length Paved in Feet	Square Yards Paved by St. Ry. Co.	Square Yards Paved by City	Cost of Paving Laid by City	Amount of Assessment
Alley blk 9 Kenwood	\$1.24	755.2		1,334.7	\$1,650.15	\$1,479.23
Alley blk 9 J. T. Blaisdell	1.47	675.8		1,275.4	1,880.33	1,759.40
Alley blk 18 No. Main	1.41	349.6		625.3	882.93	869.40
*Alley blk 14 Lake of	1.63	730.9		1,191.3	1,941.72	1,666.84
Alley Coe and Forman	1.71	170.9		207.0	354.37	329.60
Alley bet Stevens and	1.37	639.1		981.8	1,344.52	1,313.87
Alley bet Knox av S	1.40	494.3		647.2	903.31	853.64
Alley blk 1 A. D. Co.	1.29	624.5		984.0	1,267.38	1,175.50
Alley bet James and	1.43	740.0		1,168.7	1,668.87	1,572.36
Alley blk 28 J. D. W.	2.70	417.5		651.4	1,761.55	1,680.00
Alley blk 28 J. D. W.	2.62	418.3		656.0	1,720.47	1,618.00
Alley blk 48 M	3.06	155.8		254.7	780.39	756.60
Alley blk 80 M	2.26	331.5		561.1	1,266.11	1,199.91
Blaisdell	2.38	591.8		1,842.1	4,388.11	3,891.29
†Broadway	2.56	2,543.6	3,110.0	8,308.7	21,278.20	14,250.70
†Broadway	2.85	59.0		215.0	611.59	
Clinton av	2.36	669.1		2,295.3	5,405.19	4,520.09
Clinton av	1.84	2,582.6		7,266.2	13,354.84	9,278.33
*Cedar av	2.36	4,394.2	7,167.0	12,817.4	30,308.10	27,179.47
*Cedar Lake	2.35	3,184.6		12,606.5	29,620.03	21,230.67
*Crystal Lake	2.44	3,122.0	5,178.0	9,822.1	23,954.17	17,575.06
Emerson	2.30	2,539.5		9,267.6	21,346.05	16,051.47
8th st S	2.33	670.6		3,005.4	6,977.43	3,543.06
*1st st N	2.94	143.8		718.8	2,112.86	
*1st av N	2.18	961.2		3,349.4	7,293.81	5,780.67
5th st S	2.43	1,162.1		6,122.3	14,925.17	12,557.74
5th av S	2.35	2,521.7		9,175.2	21,541.39	14,916.98
5th st SE	.67	3,233.7		12,978.3	8,735.93	3,655.08
15th av SE	2.48	354.5		955.3	2,365.99	2,109.74
Gramercy av	1.50	476.4		1,310.8	1,981.23	1,573.27
*Grant st	2.25	591.8		2,334.2	5,250.21	4,672.67
†Harmon Place	2.87	292.5		750.6	2,160.01	26,719.33
Hennepin av	2.45	188.5		617.7	1,621.81	
Irving av N	1.21	1,287.0		4,348.0	5,251.30	4,132.81
Logan av N	1.31	601.0		2,129.7	2,791.69	1,897.25
*Lake st	3.36	115.3		157.3	527.91	
Newton av	1.40	2,580.0		8,141.9	11,381.58	8,888.00
19th st N	2.16	293.4		1,089.7	2,356.80	2,066.70
*9th st N	2.65	128.3		313.5	829.11	13,629.63
†Portland av	2.47	2,667.3		12,534.8	30,951.72	21,670.00
Plymouth	.88	489.6		2,489.4	2,194.67	909.80
Queen av	1.35	661.3		2,207.6	2,977.47	2,961.00
Sheridan av	1.34	1,337.3		4,712.5	6,307.52	5,343.29
*Stock Yards Road	1.10	6,580.0		11,706.1	12,881.10	11,129.07
x2nd av N	2.38	374.5		1,398.9	3,333.44	2,527.83
6th av S	2.34	322.8		1,820.9	4,261.98	3,667.85
6th av S	.90	78.8		651.2	583.61	
6th st NE						
7th						



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**TABLE No. 11**  
**PAVING REPAIRS MADE DURING THE SEASON OF 1915**

[illegible]

TABLE No. 13  
TABLE SHOWING PAVEMENT REMOVED AND REPLACED WITH OTHER PAVEMENT, JANUARY 1ST, 1910

STREET	FROM	TO	ORIGINAL PAVEMENT			NEW PAVEMENT				
			When Laid	Kind	Square Yards	Cost	When Laid	Kind	Square Yards	Cost
Previously tabulated:										
Clinton av.	Grant st.	Franklin av.	1905	Cedar blocks.	1,369,328.43	1,575,239.74	1915	Crescoted wood	1,338,025.43	2,069,459.88
6th av S.	Wash. av.	3rd st S.	1902	Sandstone on S.	7,766.20	15,308.09	1915	Crescoted wood	7,766.20	13,354.84
7th st SE.	Central av.	5th av SE.	1903	Macadam	1,820.90	3,469.97	1915	Crescoted wood	1,820.90	4,261.98
University av.	6th av SE.	Gt. N. ry.	1902	Sandstone on S.	7,412.80	5,559.00	1915	Crescoted wood	7,412.80	18,501.00
5th st SE.	6th av SE.	14th av SE.	1904	Macadam	14,218.20	27,298.94	1915	Asphalt-conc.	14,218.20	10,089.84
3rd st S.	7th av S.	10th av S.	1900	Brick	12,978.30	16,222.80	1915	Asphalt-conc.	12,978.30	8,735.93
Plymouth av.	Bridge	2nd st N.	1899	Sandstone on S.	7,062.10	12,420.30	1915	Asphalt-conc.	7,062.10	5,057.53
6th av S.	At 3rd st.	Ry. bridge.	1900	Brick	2,489.40	4,580.50	1915	Asphalt-conc.	2,489.40	2,104.67
1st st N.	3rd av N.	1885	Granite on sand	651.20	1,146.11	1,145.42	1915	Asphalt-conc.	651.20	583.61
Alley blk 80 M.	Nicollet	Marquette.	1896	Brick	718.80	1,545.42	1915	Sandstone on S.	718.80	2,112.86
						1,049.66	1915	Brick	561.10	1,206.11
Total replaced by city.					\$1,425,007.43	\$1,603,850.13			1,393,704.43	\$3,035,618.25
Replaced by St. Ry. previously tabulated.					87,227.40		1915	Granite	87,227.40	
Wash. av N.	32nd av N.	38th av N.		Macadam	704.00				704.00	
Total replaced by St. Ry.					87,931.40				87,931.40	
Grand total.					\$1,512,938.83	\$1,663,850.13			1,481,635.83	\$3,035,618.25

TABLE NO. 15

**MATERIAL ON HAND AT HAWTHORNE AVENUE TOOL HOUSE AND YARD  
DECEMBER 31, 1915  
TOOLS AND MACHINERY**

	No. of Articles	Value
Adses.....	9	\$9.90
Ads handles.....	3	1.50
Asphalt macadam mixers.....	3	1,500.00
Axes, hand, good.....	58	29.00
Axes, hand, fair.....	24	6.00
Axes, chopping.....	17	12.75
Barrels.....	10	5.00
Bars, Crow.....	22	12.50
Bars, special.....	6	3.40
Belting, rubber, 3 ft. for grader.....	36	100.00
Blocks, wooden, single.....	1	2.00
Blocks, wooden, double.....	1	3.25
Blocks, iron, single.....	2	1.00
Blocks, iron, chain.....	1	12.05
Boiler, Buffalo-Pitts.....	1	200.00
Boots, short rubber, pairs.....	16	40.00
Boxes, tools.....	9	45.00
Branding iron.....	1	1.00
Brooms, common house.....	3	.75
Brooms, fiber, push.....	25	18.75
Brooms, street push.....	8	5.00
Brushes, paint.....	6	2.10
Brushes, squeegee.....	4	2.00
Bull points.....	4	1.00
Cable, steel, 1-inch.....	48 ft.	1.44
Cable, steel, 1-inch.....	90 ft.	4.50
Cable, steel, 5-16-inch.....	36 ft.	1.25
Cable, steel, 1-inch.....	50 ft.	4.25
Cans, patent pouring.....	15	7.50
Cans, flat point pouring.....	2	1.00
Cans, 1 gallon oil.....	2	.50
Cans, 5 gallon oil.....	27	13.50
Cans, 10 gallon oil.....	21	12.60
Canthooks.....	1	.50
Chains, log.....	26	50.00
Cleaves.....	21	10.50
Clutch, master Milwaukee mixer.....	1	20.00
Coal hods.....	6	3.00
Clamps, iron, 8-6 inch and 16-14 inch.....	30	7.50
Concrete mixers—		
Chicago Street.....	1	1,200.00
Koehring Street.....	1	1,200.00
Milwaukee Street.....	2	3,000.00
Castings for concrete mixer (Koehring).....		30.00
Dies, Bridgeport pipe, 1 inch to 2 inch, 10 dies and 2 stocks.....		15.00
Dippers, tin.....	26	1.30
Expansion plates, 3-16x7x9 inches 10 inches.....	72	125.00
Emery grinder.....	1	20.00
Forks, hay.....	1	.50
Files.....	4	2.00
Funnels.....	7	.35
Gas engines and pumps.....	1	147.00
Gear for grader sprocket.....	1	
Grader, New Era.....	1	600.00
Gear for Koehring mixer.....	1	5.00
Grease cups.....	24	12.00
Grind stones.....	1	3.00
Hammers, carpenters.....	3	1.50
Hammers, brick.....	5	3.75
Hammers, stone.....	2	1.60
Hammers, sledge.....	11	11.00
Harrow.....	1	5.00
Hasps.....	4	.40
Hoes, grub.....	5	3.00
Hoes, mortar.....	3	1.50
Hoe handles.....	20	3.00

## MATERIAL ON HAND AT HAWTHORNE AVENUE TOOL HOUSE AND YARD

DECEMBER 31, 1915

## TOOLS AND MACHINERY—Continued

	No. of Articles	Value
Hose, fire, 2-inch	200 ft.	10.00
Hose, 1-inch steam 1-inch	110 ft.	44.00
Hose, 1-inch water, new 1-inch	250 ft.	75.00
Hose, 1-inch water, good 1-inch	875 ft.	175.00
Hose, 1-inch water, fair 1-inch	525 ft.	52.50
Jack screws	3	11.25
Jacks, power	1	16.00
Jacks, wagon	2	.90
Ladder, wooden	1	1.50
Lantern frames	59	17.70
Lantern globes (red)	48	7.20
Lantern globes (white)	3	.45
Levels, spirit	16	16.00
Malot boards	5	25.00
Neck yokes	2	2.00
Oil spreader	1	250.00
Padlocks	32	16.00
Pinion, beveled and drive shaft for gas roller	1	15.00
Pinion, drive, for gas roller, R 863	1	10.00
Paper, building rolls	14	7.00
Pick axes	246	98.40
Pick handles	185	27.75
Pipe cutter	1	2.50
Pails, galvanized iron	17	3.40
Pipe vise	1	4.50
Pipe, 1-inch black iron	740	29.60
Pipe, 1½-inch black iron	6700	294.80
Pipe, 1½-inch black iron	120	60.00
Plow points, grader	1	1.25
Plow points, rooter	10	32.50
Plow point, R. R.	37	120.25
Plow disc, El grader	1	100.00
Plow, rooter	5	112.50
Plow, R. R.	9	200.00
Plow, wooden beam	1	15.00
Plow shoes	18	27.00
Plow shears	5	15.00
Points for dipper teeth, Marion-Osgood shovel	5	10.00
Post hole diggers	1	1.00
Rakes, garden	17	12.75
Reducers with hydrant connection	19	38.00
Rope, 1-inch	200 ft.	7.80
Rollers, gas, 3 wheel	2	3,000.00
Rollers, steam tandem	3	3,600.00
Scales, Howe platform	1	12.50
Saws, cross cut, 2 man	8	16.00
Saws, hand	15	11.25
Scrapers, bed	2	5.00
Scrapers, slush	20	80.00
Screw drivers	1	.50
Shoes for road grader	1	2.50
Shovels, short handled, square point (good)	268	223.25
Shovels, short handled, square point (fair)	115	76.70
Steam shovel, Marion-Osgood	1	3,500.00
Shovels, long handled	3	1.50
Shovels, scoop	9	6.75
Shovels, snow	19	9.50
Stakes, iron	110	11.00
Scarifier, road	1	400.00
Scarifier points	6	25.00
Stove, heating	1	2.00
Stove pipe, 6-inch	12	1.25
Stove pipe elbows	3	.45
Tampers, stone block paving	2	4.00
Tampers, wooden concrete	3	4.50
Tape lines, metallic	8	12.00
Tarpaulins, size 12x20 feet	30	270.00
Templates for concrete paving 33 feet long, 1; 28 feet long, 1; 32 feet long, 1; 24 feet long	1	50.00
Teeth for dipper, Marion-Osgood shovel	8	16.00
Tees, grading	13	3.25
Tongs, brick paving	2	3.00
Tongs, stone paving	1	1.75
Trucks, two wheeled lumber	3	22.50
Trowels, mason	1	.50

**MATERIAL ON HAND AT HAWTHORNE AVENUE TOOL HOUSE AND YARD  
DECEMBER 31, 1915**

**TOOLS AND MACHINERY—Continued**

	No. of Articles	Value
Trowels, smoothing.....	2	1.00
Torch, oil with compression tank.....	1	100.00
Truck, four wheeled warehouse.....	1	10.00
Unions, black iron, 1-inch and 1½-inch.....	83	5.00
Valves, globe, 1½-inch.....	60	45.00
Valves, globe, 1-inch.....	27	13.50
Water closets, out-door.....	13	32.50
Wagons, lumber.....	6	210.00
Wagons, iron wheel truck.....	3	100.00
Wagons, patent dump (Austin-Western).....	20	1,000.00
Wagons, stone.....	1	35.00
Wagons, tool.....	9	450.00
Wagons, iron tank.....	1	50.00
Wagons, steaming.....	1	35.00
Wagon covers, size 0x00 feet.....	..	25.00
Worm gear for Chicago mixer.....	..	1.00
Wedges, iron.....	12	70.00
Wheelbarrows, wooden frame (good).....	20	45.00
Wheelbarrows, wooden frame (fair).....	18	87.50
Wheelbarrows, iron frame (good).....	25	42.50
Wheelbarrows, iron frame (fair).....	17	4.80
Wrenches, combination.....	3	10.50
Wrenches, hydrant.....	14	2.00
Wrenches, monkey.....	4	1.25
Wrenches, machine.....	3	10.00
Wrenches, pipe.....	10	.75
Wrenches, plow.....	2	.75
Wrenches, special.....	2	.75
Wrenches, wagon.....	7	1.75
		<hr/>
		<b>\$24,272 84</b>

TABLE NO. 17

**TOOLS AND MACHINERY IN CONNECTION WITH MUNICIPAL CRUSHER  
DECEMBER 31, 1915**

	No. of Articles	Value
Aurora crusher, screens, elevators and bins .....	1	\$1,000.00
Case traction engine .....	1	1,000.00
Belt, 8-inch rubber drive, lineal feet .....	44	12.00
Belt, 6-inch rubber elevator, lineal feet .....	18	3.60
Belt, 8-inch cotton, lineal feet .....	70	3.00
Dump wagon boxes .....	4	100.00
Cars, steel .....	2	40.00
Chain, log .....	1	2.00
Pipe, 1-inch water, lineal feet .....	80	3.20
Track and switches, lineal feet .....	105	100.00
Reducer .....	1	2.00
Steam hose, lineal feet .....	25	5.00
		<hr/>
		\$2,270.80

**TOOLS AND MATERIAL IN BLACKSMITH AND MACHINE SHOP AT HAW-  
THORNE AVENUE WAREHOUSE DECEMBER 31, 1915**

	No. of Articles	Value
Anvil .....	1	\$12.00
Blower, electric .....	1	24.00
Blower, hand .....	1	15.00
Bolt cutter .....	1	3.00
Bolts, carriage, 5x $\frac{1}{2}$ .....	50	.70
Bolts, carriage, 6x $\frac{1}{2}$ .....	50	.80
Bolts, carriage, 3x $\frac{1}{2}$ .....	50	.55
Bolts, carriage, 6x $\frac{1}{2}$ .....	80	.95
Bolts, carriage, 5x $\frac{1}{2}$ .....	72	.75
Bolts, carriage, 4x $\frac{1}{2}$ .....	100	.95
Bolts, carriage, 3x $\frac{1}{2}$ .....	95	.85
Bolts, carriage, 3x $\frac{1}{2}$ .....	50	.40
Bolts, carriage, 2x $\frac{1}{2}$ .....	100	.80
Bolts, carriage, 2x $\frac{1}{2}$ .....	50	.35
Bolts, carriage, 1x $\frac{1}{2}$ .....	40	.25
Bolts, carriage, 1x $\frac{1}{2}$ .....	50	.30
Bolts, carriage, 5x5-16 .....	25	.20
Bolts, carriage, 4x5-16 .....	40	.30
Bolts, carriage, 4x5-16 .....	106	.75
Bolts, carriage, 3x5-16 .....	100	1.05
Bolts, carriage, 3x5-16 .....	80	.50
Bolts, carriage, 2x5-16 .....	100	.60
Bolts, carriage, 2x5-16 .....	45	.25
Bolts, carriage, 1x5-16 .....	40	.20
Bolts, machine, 5x $\frac{1}{2}$ .....	20	.55
Bolts, machine, 4x $\frac{1}{2}$ .....	40	1.00
Bolts, machine, 3x $\frac{1}{2}$ .....	40	.90
Bolts, machine, 3x $\frac{1}{2}$ .....	45	.50
Bolts, carriage, 1x5-16 .....	45	.30
Bolts, carriage, 4x4 $\frac{1}{2}$ .....	25	.15
Bolts, carriage, 3x4 $\frac{1}{2}$ .....	30	.25
Bolts, carriage, 3x $\frac{1}{2}$ .....	80	.65
Bolts, carriage, 2x4 $\frac{1}{2}$ .....	28	.10
Bolts, carriage, 2x $\frac{1}{2}$ .....	40	.15
Bolts, carriage, 1x4 $\frac{1}{2}$ .....	45	.25
Bolts, carriage, 1x $\frac{1}{2}$ .....	60	.20
Bolts, plow, 2x1 $\frac{1}{2}$ .....	126	1.80
Bolts, plow, 1x1 $\frac{1}{2}$ .....	119	1.55
Brace, breast drill .....	1	1.75
Brace, carpenter's .....	1	1.50
Bits, carpenters, $\frac{1}{2}$ to 1 inch .....	12	2.50
Brace, ratchet drill .....	1	3.50
Clamps .....	2	1.00
Chisels, blacksmith's .....	4	.40
Chisels, cold .....	4	.40
Dies, bolt, 1-inch .....	1	1.50
Dies, bolt, $\frac{1}{2}$ -inch .....	1	1.25
Dies, bolt, $\frac{1}{2}$ -inch .....	1	1.00
Dies, bolt, $\frac{1}{2}$ -inch .....	1	.90
Dies, bolt, $\frac{1}{2}$ -inch .....	1	.75
Dies, bolt, 7-16-inch .....	1	.75

**TOOLS AND MATERIAL IN BLACKSMITH AND MACHINE SHOP AT HAWTHORNE AVENUE WAREHOUSE DECEMBER 31, 1915**

	No. of Articles	Value
Dies, bolt, 5-16-inch.....	1	.65
Dies, bolt, 1-inch.....	1	.65
Dies, pipe, 1 1/4-inch.....	1	2.00
Dies, pipe, 1-inch.....	1	2.00
Dies, pipe, 1-inch.....	1	2.00
Dies, pipe, 1-inch.....	1	2.00
Dies, pipe, 1-inch.....	1	2.00
Dies, pipe, 1-inch.....	1	2.00
Dies, pipe, 1-inch.....	1	2.00
Draw knife.....	1	.75
Drill press.....	1	15.00
Drill, 1-inch.....	1	.75
Drill, 1/2-inch.....	1	.65
Drill, 1/2-inch.....	1	.50
Drill, 1/2-inch.....	2	.50
Drill, 1/2-inch.....	3	.50
Drill, 7-16 inch.....	1	.45
Drill, 1/2-inch.....	1	.45
Drill, 5-16-inch.....	1	.40
Drill, 1/2-inch.....	2	.35
Drill, 9-16 inch.....	3	.50
Engine, gas, 1 1/2 h. p. and pump.....	1	147.00
Forge, champion.....	1	15.00
Forge, circular sheet iron with hood and stock.....	1	24.00
Files, 18-inch flat bastard.....	6	4.50
Files, 12-inch flat bastard.....	4	2.00
Files, 10-inch mill.....	4	1.00
Files, 7-inch mill.....	1	.25
Files, 14-inch rasp, horse.....	2	1.50
Files, 9-inch slim taper saw.....	10	1.50
Files, 6-inch slim taper saw.....	4	.75
Files, 17-inch round.....	1	.65
Files, 12-inch round.....	4	2.00
Files, 14-inch round.....	2	1.00
Files, 12-inch half round.....	2	1.00
Hacksaw, 12-inch.....	1	.60
Hardie, blacksmith.....	1	.25
Oilers.....	2	.50
Oil stone.....	1	.75
Plane, 14-inch smoothing.....	1	.50
Iron, flat, 3x1/2-inch, pounds 128; lineal feet.....	20	2.55
Iron, flat, 2x1/2-inch, pounds 43; lineal feet.....	10	.86
Iron, flat, 2 1/2x1/2-inch, pounds 53; lineal feet.....	10	1.06
Iron, flat, 1 1/2x1/2-inch, pounds 23; lineal feet.....	6	.46
Iron, flat, 1 1/2x1/2-inch, pounds 134; lineal feet.....	60	2.68
Iron, flat, 3x1/2-inch, pounds 61; lineal feet.....	16	3.22
Iron, flat, 3 1/2x1/2-inch, pounds 48; lineal feet.....	16	.96
Iron, flat, 3x1/2-inch, pounds 19; lineal feet.....	5	.38
Iron, flat, 1 1/2x1/2-inch, pounds 13; lineal feet.....	24	.26
Iron, flat, 3x1/2-inch, pounds 31; lineal feet.....	8	.62
Iron, angle, 1/2-inch, pounds 8; lineal feet.....	10	.16
Iron, round, 1 1/2-inch, pounds 84; lineal feet.....	20	1.68
Iron, round, 1/2-inch, pounds 147; lineal feet.....	72	2.94
Iron, round, 1/2-inch, pounds 138; lineal feet.....	92	2.76
Iron, round, 1/2-inch, pounds 104; lineal feet.....	100	2.08
Iron, round, 1/2-inch, pounds 59; lineal feet.....	88	1.18
Iron, round, 7-16 inch, pounds 17; lineal feet.....	34x	.34
Iron, round, 1/2-inch, pounds 20; lineal feet.....	52	.40
Iron, round, 5/16 inch, pounds 144; lineal feet.....	164	.86
Iron, round, 1/2-inch, pounds 14; lineal feet.....	82	.28
Shears, tinsmith.....	1	.75
Screw drivers.....	2	.30
Sledge hammers.....	1	1.00
Steel, plain, 2x1/2-inch, lineal feet 12; pounds.....	31	.62
Steel, plain, 2 1/2x1/2-inch, lineal feet 4; pounds.....	17	.34
Steel, tool, 1 1/2-inch diameter, lineal feet 12; pounds.....	50	3.50
Steel, tool, 1-inch diameter, lineal feet 12; pounds.....	32	2.24
Steel, tool, 1/2-inch diameter, lineal feet 12; pounds.....	25	1.75
Steel, tool, 1/2-inch diameter, lineal feet 8; pounds.....	12	.85
Steel, tool, 1/2-inch diameter, lineal feet 12; pounds.....	13	.91
Steel, tool, 1/2-inch diameter, lineal feet 20; pounds.....	41	2.87
Taps, 1/2 to 1 inch.....	9	13.00
Tongs, blacksmith's.....	19	6.00
Vise, blacksmith's.....	1	10.00
Vise, pipe.....	1	5.00
Vise, machinist's.....	1	14.35
Wrenches, monkey.....	6	4.50

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**\$423.60**



## TOOLS ACCOUNT CREOSOTED BLOCK PAVING REPAIRS DECEMBER 31, 1915

	No. of Articles	Value
Adses.....	6	\$6.60
Adse handles.....	6	3.00
Axes, chopping.....	2	1.50
Axes, hand.....	26	13.00
Bars, crow.....	2	1.15
Brooms, fiber push.....	3	2.25
Brooms, steel push.....	1	.65
Cans, 1-gallon.....	1	.25
Coal hods.....	2	1.00
Dippers.....	2	.10
Funnels.....	1	.10
Hammers, brick.....	3	2.25
Hammers, stone.....	2	1.60
Kerosene, gallons.....	5	.50
Lanterns.....	12	3.60
Lantern globes.....	10	1.50
Levels, spirit.....	2	2.00
Pails, galvanised iron.....	2	.40
Picks.....	13	5.20
Pick handles.....	12	1.80
Rakes, garden.....	1	.70
Reducers.....	1	2.00
Saws, hand.....	1	.75
Shovels, round point, short handled (good).....	14	11.75
Shovels, round point, short handled (fair).....	4	2.25
Shovels, scoop.....	1	.75
Squeegee brushes.....	2	1.00
Tampers, iron.....	1	2.00
Tampers, wood.....	2	3.00
Wrenches, hydrant.....	2	.75
Wrenches, monkey.....	1	.50
		<hr/>
		\$73.90

PAVING MATERIAL ON HAND AT LAUREL AVENUE CEMENT WAREHOUSE  
AND YARD DECEMBER 31, 1915

Cement in warehouse, 1400 Lehigh, 823 N. W., sacks.....	2223	\$911.44
Curbing, granite, straight, lineal feet.....	492	295.20
Curbing, granite, radius, lineal feet.....	151	113.25
Creosoted paving blocks 4 -inch (new) square yards.....	140	210.00
Creosoted paving blocks, 3½-inch (new) square yards.....	40	56.00
Creosoted paving blocks, 4-inch (culls) square yards.....	70	52.50
Creosoted paving blocks, 3½-inch (culls) square yards.....	140	105.00
Creosoted paving blocks, 4-inch (2nd hand) square yards.....	385	385.00
Brick paving blocks, number.....	1786	44.63
Lumber, 3x10-12 feet Norway, 830 pieces, B. M., feet.....	24900	617.60
Lumber, 2x10-16 feet Norway, 326 pieces, B. M., feet.....	8693	199.94
Lumber, 4x10-16 feet hemlock, 142 pieces B. M., feet.....	7573	166.61
Lumber, 4x10-14 feet hemlock, 54 pieces B. M., feet.....	2520	55.44
Lumber, 4x10-12 feet hemlock, 12 pieces, B. M., feet.....	480	10.55
Lumber, 2x6-16 feet pine, 52 pieces, B. M., feet.....	832	20.00
Lumber, ½x5-16 feet pine, 26 pieces, feet.....	208	5.00
Lumber, 1x2½-8 feet southern pine creosoted, 875 pieces, feet.....	7000	140.00
Lumber, 1x2½-12 feet southern pine creosoted, 50 pieces, feet.....	600	12.00
Limestone, crushed, cubic yards.....	4	3.00
		<hr/>
		\$3,403.16

**MATERIAL ON HAND AT HAWTHORNE AVENUE WAREHOUSE AND YARD  
DECEMBER 31, 1915**

	No. of Articles	Value
Axle grease, pounds.....	75	\$2.25
Babbitt, high speed, pounds.....	40	18.00
Babbitt, low speed, pounds.....	60	2.40
Building paper, rolls.....	10	4.00
Curb stone, sandstone, straight (old), lineal feet.....	850	212.50
Curb stone, sandstone, dry corners (old).....	9	9.00
Expansion joints, elastic, 7 foot strips, lineal feet.....	1500	77.40
Expansion steel, 114 pieces 16 foot Kahn patent, $\frac{1}{2} \times 2\frac{1}{2}$ inches, lin ft.....	1824	109.45
Expansion steel, 18 pieces 16 foot common iron, $\frac{1}{2} \times 2\frac{1}{2}$ inch, lineal feet.....	288	11.50
Gasoline, gallons.....	120	21.60
Hack saw blades.....	36	1.50
Lumber, hardwood (oak) different sizes, B. M.....	270	16.20
Lumber (fir) different sizes, B. M.....	91	3.65
Lumber, pine, different sizes, B. M.....	875	26.25
Nails, 60d., pounds.....	300	8.40
Nails, 8d., pounds.....	625	17.50
Nails, 6d., pounds.....	50	1.40
Oil, cylinder, gallons.....	5	1.25
Oil, bl., gallons.....	138	34.50
Oil, gas engine, gallons.....	35	8.75
Oil, hard, pounds.....	10	.50
Oil, kerosene, gallons.....	64	6.40
Oil, linseed, gallons.....	5	3.00
Paint, black asphalt, gallons.....	4	2.00
Paint, house mixed, gallons.....	10	12.50
Packing, rainbow, pounds.....	5	1.25
Putty, pounds.....	25	.75
Stain, natural glass finish, gallons.....	3	3.75
Screws, 2 inch, gross.....	8	8.00
Street closed signs.....	12	12.00
Street signs.....	166	415.80
Street sign posts.....	48	48.00
Wire ribbon fence, bundles.....	12	60.00
Waste, white, bale.....	1	12.50
		<hr/> \$560.05

**TOOLS AND MATERIAL IN CONNECTION WITH MUNICIPAL ASPHALT PLANT  
DECEMBER 31, 1915**

	No. of Articles	Value
<b>TOOLS</b>		
Asphalt plant.....	1	\$12,000.00
Covers, 6x8 feet, wagon.....	12	42.00
Cutters, asphalt.....	24	12.00
Dippers, asphalt, 9 quart.....	2	1.50
Fire wagon.....	1	75.00
Flue cleaner.....	1	2.00
Hose, steam, $\frac{1}{2}$ -inch (paving tools) lineal feet.....	12	2.00
Hose, water, 1-inch 4-ply hose (paving tools) lineal feet.....	100	15.00
Irons, smoothing.....	9	18.00
Jack screws, 12-inch.....	8	32.00
Kettle, asphalt melting, 100 gallons capacity.....	1	65.00
Rakes, asphalt.....	7	5.25
Shovels, molders.....	3	2.25
Shovels, scoop (paving tools).....	2	1.00
Surface heaters (paving tools).....	1	100.00
Tampers, asphalt.....	14	14.00
Roller, hand.....	1	75.00
Roller, Iroquois steam tandem.....	1	2,000.00
Wagon, sand spreading.....	1	250.00
Wagons, Troy dump.....	12	1,200.00
Oilers.....	4	1.00
Padlocks.....	2	1.00
<b>MATERIAL</b>		
Asphalt, Texaco, tons.....	11046	1,632.41
Asphalt, Trinidad, tons.....	220	4,351.10
Sand, cubic yards.....	728	364.17
Granite, cubic yards.....	51.04	105.37
Dust, tons.....	37,333	154.15
Sacks, empty, dust.....	3,852	385.20
		<hr/> \$22,906.40

TABLE No. 20.  
CURB AND GUTTER SET DURING THE YEAR 1914 AND ASSESSED IN THE TAXES OF 1914

Street	From	To	Kind	Depth of Stone in Inches	Width of Gutter in Inches	Thickness of Curb in Inches	Cost Price per Lineal Foot		Length		Cost	Amount of Assessment
							Straight Curb	Radius Curb	Straight Curb Feet	Radius Curb Feet		
Aldrich av N	30th av	Lowry av	Artificial	14.5	8	5.5	\$ .35		3,705.0		\$1,296.75	\$168.00
Aldrich av S	46th st.	49th st.	Artificial	14.5	12	5.5	.35		3,705.0		1,256.22	156.22
Beacon st.	Oak st.	Ontario st.	Artificial	14.5	8	5.5	.35		680.0		238.00	195.12
Bedford av.	University av.	4th st SE.	Artificial	14.5	8	5.5	.35		872.1		305.24	304.40
Blaisdell av.	38th st.	47th st.	Artificial	14.5	8	5.5	.35		1,121.2		392.42	365.61
Bloomington av.	38th st.	40th st.	Artificial	14.5	8	5.5	.35		1,512.7		529.44	500.01
Brighton av.	Lowry av	26th av NE.	Artificial	14.5	8	5.5	.35		1,175.6		411.46	410.80
Brook av.	15th av SE.	18th av SE.	Artificial	14.5	8	5.5	.35		1,769.7		619.40	509.21
Bryant av S.	40th st.	41st st.	Artificial	14.5	8	5.5	.35		1,262.9		442.01	411.04
Bryant av S.	40th st.	48th st.	Artificial	14.5	8	5.5	.35		2,222.8		779.03	736.89
Buchanan st.	Lowry av NE.	20th av NE.	Artificial	14.5	8	5.5	.35		831.0		290.85	288.61
Cedar av.	Lake St.	29th st.	Artificial	14.5	8	5.5	.35		464.7		162.65	162.65
Cecil st.	Sharon av.	C.M. & St.P.R.R.	Artificial	14.5	8	5.5	.35		1,566.1		548.13	529.69
Cedar av.	38th st.	42nd st.	Artificial	14.5	8	5.5	.35		5,063.0		1,772.05	1,665.62
Cedar Lk Road.	Depot st.	Chowen av.	Artificial	14.5	8	5.5	.35		608.9		213.12	260.47
Cedar Lk Road.	Laurel av.	Penn av.	Artificial	14.5	8	5.5	.35		415.0		145.25	126.49
Cole av.	22nd av SE.	25th av SE.	Artificial	14.5	8	5.5	.35		1,869.0		654.32	736.47
Colfax av N.	Western av.	4th av.	Artificial	14.5	8	5.5	.35		913.3		319.66	278.36
Colfax av S.	43rd st.	40th st.	Artificial	14.5	8	5.5	.35		3,211.2		1,123.92	1,063.34
Colfax av S.	49th st.	Boulevard	Artificial	14.5	8	5.5	.35		3,969.5		1,389.32	1,289.47
Columbus av.	28th st.	Lake st.	Artificial	14.5	8	5.5	.35		2,041.8		714.58	741.58
Columbus av.	36th st.	37th st.	Artificial	14.5	8	5.5	.35		1,192.5		417.38	399.52
Como av.	15th av SE.	15th av SE.	Artificial	14.5	8	5.5	.15		1,754.2		283.13	195.38
Crystal Lake av.	Penn av.	26th av N.	Artificial	14.5	8	5.5	.35		2,036.2		338.50	338.50
Crystal Lake av.	26th av N.	W. City Limits.	Artificial	14.5	8	5.5	.35		5,622.1		1,967.73	1,832.29
Delaware st.	Union st.	Harvard st.	Artificial	14.5	8	5.5	.35		709.3		248.26	221.20
Division st.	Western av.	6th av N.	Artificial	14.5	8	5.5	.35		2,813.7		984.79	984.79
Dupont av N.	36th av.	39th av.	Artificial	14.5	8	5.5	.35		1,605.9		562.07	562.07
Dupont av N.	36th av.	22nd st.	Artificial	14.5	8	5.5	.35		3,856.2		1,349.67	1,256.15
Dupont av S.	50th st.	Boulevard.	Artificial	14.5	8	5.5	.35		621.8		894.88	815.11
Dupont av S.	50th st.	Boulevard.	Artificial	14.5	8	5.5	.35		2,556.8		894.88	815.11

11th av SE	University av.	5th st.	Artificial	14.5	8	12	5.5	35	339.95	115.55
15th av SE	Morgan av.	O'Brien av.	Artificial	14.5	8	12	5.5	35	307.86	
34th st	36th st	36th st	Artificial	14.5	8	12	5.5	35	831.43	
18th av SE	4th st	5th st	Artificial	14.5	8	12	5.5	35	278.54	
18th av SE	Camino av.	Division st	Artificial	14.5	8	12	5.5	35	248.99	
18th av SE	40th st.	44th st	Artificial	14.5	8	12	5.5	35	665.74	
Elliot av.	Western av.	6th av N	Artificial	14.5	8	12	5.5	35	605.75	
Emerson av N	33rd av	37th av	Artificial	14.5	8	12	5.5	35	885.01	
Emerson av N	50th st	Boulevard	Artificial	14.5	8	12	5.5	35	1,628.62	
Emerson av S	Elroy st	Pleasant av.	Artificial	14.5	8	12	5.5	35	1,628.62	
Elroy st	Blaisdell av	Walnut st.	Artificial	14.5	8	12	5.5	35	750.02	
Essex st	Harvard st	17th st	Artificial	14.5	8	12	5.5	35	408.74	
5th av N	16th st	Grand av.	Artificial	14.5	8	12	5.5	35	180.80	
5th av S	Coffax av.	8th st	Artificial	14.5	8	12	5.5	35	113.54	
5th av SE	University av.	4th st	Artificial	14.5	8	12	5.5	35	685.30	
5th av SE	University av.	8th st	Artificial	14.5	8	12	5.5	35	232.43	
5th av SE	5th st	8th st	Artificial	14.5	8	12	5.5	35	539.81	
5th av SE	36th st	40th st	Artificial	14.5	8	12	5.5	35	99.19	
5th av S	8th av S	10th av S	Artificial	14.5	8	12	5.5	35	1,048.98	
14th av S	Lake st	33rd st	Artificial	14.5	8	12	5.5	35	1,541.36	
14th av S	36th st	40th st	Artificial	14.5	8	12	5.5	35	1,326.01	
14th av S	Grant st.	14th st	Artificial	14.5	8	12	5.5	35	17.85	
15th av S	43rd st	38th st	Artificial	14.5	8	12	5.5	35	1,276.4	
15th av S	36th st	44th st	Artificial	14.5	8	12	5.5	35	2,436.5	
15th av E	10th av S	11th av S	Artificial	14.5	8	12	5.5	35	80.80	
40th st E	Park av.	Oakland av.	Artificial	14.5	8	12	5.5	35	41.12	
40th st E	Minnehaha av	36th av	Artificial	14.5	8	12	5.5	35	326.0	
40th st E	Pillsbury av	Pleasant av.	Artificial	14.5	8	12	5.5	35	129.60	
41st st W	Nicollet av	Lyndale av	Artificial	14.5	8	12	5.5	35	3,480.9	
41st st W	Upton av	Sheridan av	Artificial	14.5	8	12	5.5	35	1,218.32	
42nd st E	26th av S	W R B. Pkwy.	Artificial	14.5	8	12	5.5	35	119.77	
42nd st E	Washburn av.	Vincent av	Artificial	14.5	8	12	5.5	35	14,173.8	
43rd av S	Lake st.	33rd st.	Artificial	14.5	8	12	5.5	35	26.7	
44th st W	Lyndale av.	Dupont av.	Artificial	14.5	8	12	5.5	35	281.5	
44th st W	Xerxes av.	Beard av.	Artificial	14.5	8	12	5.5	35	3,509.0	
45th st W	Coffax av.	Dupont av.	Artificial	14.5	8	12	5.5	35	1,779.9	
45th st W	Upton av.	Zenith av.	Artificial	14.5	8	12	5.5	35	2,143.4	
46th st W	Xerxes av.	Xerxes av.	Artificial	14.5	8	12	5.5	35	282.6	
46th st W	York av.	Beard av.	Artificial	14.5	8	12	5.5	35	2,247.5	
47th st W	York av.	Beard av.	Artificial	14.5	8	12	5.5	35	1,409.2	
47th st W	Nicollet av.	Fremont av.	Artificial	14.5	8	12	5.5	35	1,718.7	
48th st W	Dupont av.	Emerson av.	Artificial	14.5	8	12	5.5	35	4,571.8	
49th st W	Dupont av.	Emerson av.	Artificial	14.5	8	12	5.5	35	3,409.8	
51st st E	Nicollet av.	2nd av.	Artificial	14.5	8	12	5.5	35	526.5	
			Artificial	14.5	8	12	5.5	35	231.6	
			Artificial	14.5	8	36	5.5	35	162.4	
			Artificial	14.5	8	36	5.5	35	1,072.42	
			Artificial	14.5	8	36	5.5	35	1,012.61	

TABLE No. 20—Continued  
CURB AND GUTTER SET DURING THE YEAR 1914 AND ASSESSED IN THE TAXES OF 1914

Street	From	To	Kind	Depth of Stone in Inches	Depth of Gutter in Inches	Width of Gutter in Inches	Thickness of Curb in Inches	Cost Price per Lineal Foot		Length	Cost	Amount of Assessment
								Straight Curb	Radius Curb	Straight Curb Feet	Radius Curb Feet	
Killmore st.	Spring st.	Division st.	Artificial	14 5	8	12	5 5	35		1,887.9		690.72
Killmore st.	Broadway st.	16th av NE.	Artificial	14 5	8	12	5 5	35		2,808.9		949.75
Killmore st.	28th av NE.	30th av NE.	Artificial	14 5	8	12	5 5	35		618.0		208.55
Franklin av.	Sheridan av.	Thomas av.	Artificial	14 5	8	12	5 5	35		250.0		83.13
Franklin av. S.	31st st.	34th st.	Artificial	14 5	8	12	5 5	35		3,476.0		1,216.99
Franklin av. S.	31st st.	Boulevard	Artificial	14 5	8	12	5 5	35		2,616.7		1,453.08
Franklin av. S.	31st st.	Ontario st.	Artificial	14 5	8	12	5 5	35		1,535.6		513.84
Franklin av. S.	31st st.	Lowry av NE.	Artificial	14 5	8	12	5 5	35		2,047.3		716.55
Franklin av. S.	31st st.	34th st.	Artificial	14 5	8	12	5 5	35		3,468.2		1,213.98
Franklin av. S.	31st st.	C.M. & St. P. Ry.	Artificial	14 5	8	12	5 5	35		1,557.2		1,377.33
Franklin av. S.	31st st.	Emerald st.	Artificial	14 5	8	12	5 5	35		412.1		141.89
Franklin av. S.	31st st.	29th st.	Artificial	14 5	8	12	5 5	35		1,085.9		334.74
Franklin av. S.	31st st.	48th st.	Artificial	14 5	8	12	5 5	35		2,381.7		833.60
Franklin av. S.	31st st.	Sheridan av.	Artificial	14 5	8	12	5 5	35		2,498.1		874.33
Franklin av. S.	31st st.	Fulton st.	Artificial	14 5	8	12	5 5	35		3,099.4		1,094.79
Franklin av. S.	31st st.	22nd av NE.	Artificial	14 5	8	12	5 5	35		1,181.1		413.39
Franklin av. S.	31st st.	Lagoon av.	Artificial	14 5	8	12	5 5	35		788.6		117.60
Franklin av. S.	31st st.	Lake St.	Artificial	14 5	8	12	5 5	35		1,234.7		261.10
Franklin av. S.	31st st.	Franklin av.	Artificial	14 5	8	12	5 5	35		1,120.9		432.14
Franklin av. S.	31st st.	Sheridan av.	Artificial	14 5	8	12	5 5	35		1,312.8		392.32
Franklin av. S.	31st st.	Aldrich av.	Artificial	14 5	8	12	5 5	35		873.3		459.48
Franklin av. S.	31st st.	38th av.	Artificial	14 5	8	12	5 5	35		5,813.8		304.00
Franklin av. S.	31st st.	38th av.	Artificial	14 5	8	12	5 5	35		681.0		203.83
Franklin av. S.	31st st.	38th av.	Artificial	14 5	8	12	5 5	35		238.35		1,871.70
Franklin av. S.	31st st.	38th av.	Artificial	14 5	8	12	5 5	35		1,722.8		602.98
Franklin av. S.	31st st.	Jefferson st.	Artificial	14 5	8	12	5 5	35		4,328.9		1,515.12
Franklin av. S.	31st st.	City Limits.	Artificial	14 5	8	12	5 5	35		705.1		246.78
Franklin av. S.	31st st.	Malcolm av.	Artificial	14 5	8	12	5 5	35		2,778.3		972.41
Franklin av. S.	31st st.	24th st.	Artificial	14 5	8	12	5 5	35		3,000.9		1,050.31
Franklin av. S.	31st st.	42nd st.	Artificial	14 5	8	12	5 5	35		2,010.9		794.15
Franklin av. S.	31st st.	30th av S.	Artificial	14 5	8	12	5 5	35		2,010.9		678.79

9th av SE	University av	5th st.	Artificial.	14.5	8	12	5.5	35	674.7	286.14	284.04
19th av NE	Jefferson st.	Monroe st.	Artificial.	14.5	8	12	5.5	35	1,110.1	300.04	300.53
37th st.	19th st.	38th st.	Artificial.	14.5	8	12	5.5	35	1,230.4	432.74	414.82
19th av SE	University av	4th st.	Artificial.	14.5	8	12	5.5	35	780.0	257.81	255.22
19th av SE	Como av	Tulmage av	Artificial.	14.5	8	12	5.5	35	9,062.0	280.88	282.80
Nicollet av.	39th st.	Minnehaha blvd.	Artificial.	14.5	8	12	5.5	35	4,185.1	5,466.70	6,460.23
Oak st.	University av	River Boulevard.	Artificial.	14.5	8	12	5.5	35	9,039.7	222.89	200.05
Oakland av.	24th st.	28th st.	Artificial.	14.5	8	12	5.5	35	3,921.4	1,357.03	1,338.34
Oakland av.	37th st.	38th st.	Artificial.	14.5	8	12	5.5	35	3,022.2	190.77	100.44
Oliver av N.	Cedar Lake Rd.	Railroad.	Artificial.	14.5	8	12	5.5	35	1,001.0	600.85	641.00
Oliver av N.	16th av N.	10th av	Artificial.	14.5	8	12	5.5	35	1,200.0	492.24	877.72
Ontario st.	Beacon st.	Washington av.	Artificial.	14.5	8	12	5.5	35	531.0	160.80	210.44
Orin av	Bedford st.	Emerald st.	Artificial.	14.5	8	12	5.5	35	423.2	144.12	134.07
Parks	Chowen av	28th st.	Artificial.	14.5	8	12	5.5	35	354.2	123.97	
Park av	38th st.	40th st.	Artificial.	14.5	8	12	5.5	35	980.9	101.46	847.60
Pillsbury av.	39th st.	40th st.	Artificial.	14.5	8	12	5.5	35	405.1	141.74	122.43
Pleasant av.	40th st.	41st st.	Artificial.	14.5	8	12	5.5	35	63.80	63.80	41.46
Folk st.	16th av NE	14th av NE	Artificial.	14.5	8	12	5.5	35	970.1	389.53	314.36
Powderhorn Ter.	12th av S.	14th av N.	Artificial.	14.5	8	12	5.5	35	530.4	187.74	100.26
Queen av.	Hawthorne av.	Laurel av.	Artificial.	14.5	8	12	5.5	35	1,189.0	419.09	419.09
Russell av N.	Hawthorne av.	Laurel av.	Artificial.	14.5	8	12	5.5	35	1,200.4	420.14	418.95
2nd av SE	University av	4th st.	Artificial.	14.5	8	12	5.5	35	1,101.0	30.35	57.75
2nd av N.	Cedar Lake Rd.	Penn av.	Artificial.	14.5	8	12	5.5	35	3,104.3	1,138.02	
2nd av SE	5th st.	4th st.	Artificial.	14.5	8	12	5.5	35	247.17	247.17	377.31
6th av SE	5th st.	7th st.	Artificial.	14.5	8	12	5.5	35	820.5	345.04	375.41
18th av	18th av	19th av	Artificial.	14.5	8	12	5.5	35	1,102.8	211.00	201.10
24th st NE	University av	4th st.	Artificial.	14.5	8	12	5.5	35	1,005.0	230.07	230.07
16th av SE	Russell av	Union av.	Artificial.	14.5	8	12	5.5	35	1,171.4	410.13	512.13
16th av N.	37th st.	38th st.	Artificial.	14.5	8	12	5.5	35	1,231.1	432.04	415.31
16th av SE	University av	Cl. Nor. Ry	Artificial.	14.5	8	12	5.5	35	1,170.7	400.74	417.24
16th av N.	Morgan av	Oliver av	Artificial.	14.5	8	12	5.5	35	1,032.2	103.27	319.34
St. Mary av.	University av	N. Hing Prospect	Artificial.	14.5	8	12	5.5	35	2,840.1	604.14	620.70
St. Paul av.	Depot st.	Field	Artificial.	14.5	8	12	5.5	35			829.17
Sheridan av.	Hawthorne av.	Chowen av	Artificial.	14.5	8	12	5.5	35	1,830.7	612.55	608.94
Spruce Place	15th st.	Cedar Lake Rd.	Artificial.	14.5	8	12	5.5	35			14.39
Spruor st.	15th st.	Oak Grove st.	Artificial.	14.5	8	12	5.5	35	95.4	5.00	21.70
10th av SE	7th av	Vale av	Artificial.	14.5	8	12	5.5	35	14.00		
30th st	30th st.	30th st.	Artificial.	14.5	8	12	5.5	35	979.26	900.07	900.07
30th st NE	29th av	30th av	Artificial.	14.5	8	12	5.5	35	635.46	635.46	635.46
104th av SE	Como av.	Division st.	Artificial.	14.5	8	12	5.5	35	1,617.0	150.74	150.74
12th av SE	8th st.	9th st.	Artificial.	14.5	8	12	5.5	35	1,604.41	880.18	880.18
12th av SE	4th st.	5th st.	Artificial.	14.5	8	12	5.5	35	2,501.8	6.22	6.22
12th av SE	6th st.	7th st.	Artificial.	14.5	8	12	5.5	35	94.6	5.22	5.22
13th av NE	4th st.	Washington st.	Artificial.	14.5	8	12	5.5	35	1,775.4	691.36	677.57

TABLE No. 20—Continued  
CURB AND GUTTER SET DURING THE YEAR 1914 AND ASSESSED IN THE TAXES OF 1914

Street	From	To	Kind	Depth of Stone in Inches	Depth of Gutter in Inches	Width of Gutter in Inches	Thickness of Curb in Inches	Cost Price per Lineal Foot			Cost	Amount of Assessment
								Straight Curb	Radius Curb	Length Straight Feet Radius Feet		
13th av S	31st st.	Powderhorn ter.	Artificial	14.5	8	12	5.5	.35		571.2	119.92	179.69
13th av S	37th st.	40th st.	Artificial	14.5	8	12	5.5	.35		3,117.2	1,090.99	1,042.23
13th av SE	4th st.	7th st.	Artificial	14.5	8	12	5.5	.35		2,003.1	701.05	697.41
20th av NE	5th st.	Washington av.	Artificial	14.5	8	12	5.5	.35		1,257.0	440.02	439.25
20th av S	36th st.	38th st.	Artificial	14.5	8	12	5.5	.35		2,515.7	880.49	829.18
20th av SE	Como av.	Talmage av.	Artificial	14.5	8	12	5.5	.35		1,193.6	417.76	415.38
21st av SE	Cole av.	Fairmount av.	Artificial	14.5	8	12	5.5	.35		1,243.9	435.02	407.82
23rd av SE	Cole av.	Fairmount av.	Artificial	14.5	8	12	5.5	.35		1,243.9	435.02	407.82
24th av NE	5th st.	6th st.	Artificial	14.5	8	12	5.5	.35		507.8	154.21	103.31
24th st E	30th av S	Seabury av.	Artificial	14.5	8	12	5.5	.35		3,569.8	1,249.43	1,073.66
25th st	Hennepin av.	Humboldt av.	Artificial	14.5	8	12	5.5	.35		435.6	152.46	140.95
26th st W	Newton av.	Boulevard	Artificial	14.5	8	12	5.5	.35		221.90	221.90	200.76
27th av N	Lyndale av.	Emerson av.	Artificial	14.5	8	12	5.5	.35		2,569.9	899.46	845.25
27th av S	Hiawatha av.	42nd st.	Artificial	14.5	8	12	5.5	.35		9,977.3	3,492.06	3,248.91
27th av SE	4th st.	Dartmouth av.	Artificial	14.5	8	12	5.5	.35		3,277.2	1,136.87	1,083.28
28th av NE	Taylor st.	Johnson st.	Artificial	14.5	8	12	5.5	.35		3,115.2	1,090.32	937.86
28th st W	Lake of Isles blvd	Dean Boulevard	Artificial	14.5	8	12	5.5	.35		3,214.0	809.90	616.56
28th st W	Cedar Lake Rd.	Chowen av.	Artificial	14.5	8	12	5.5	.35		1,355.4	474.39	442.29
29th st W	Nicollet av.	Pleasant av.	Artificial	14.5	8	12	5.5	.35		2,136.8	747.88	715.82
29th st W	Lyndale av.	Hennepin av.	Artificial	14.5	8	12	5.5	.35		993.8	347.83	287.56
30th av S	Franklin Terrace	Franklin av.	Artificial	14.5	8	12	5.5	.35		6,071.1	2,134.88	1,831.97
31st av S	Hiawatha av.	42nd st.	Artificial	14.5	8	12	5.5	.35		1,238.7	433.55	393.54
31st av S	24th st.	25th st.	Artificial	14.5	8	12	5.5	.35		2,618.1	916.33	829.39
31st av S	32nd st.	34th st.	Artificial	14.5	8	12	5.5	.35		6,747.9	2,301.77	2,156.04
31st st E	Chicago av.	21st av.	Artificial	14.5	8	12	5.5	.35		378.7	34.63	
31st st E	Chicago av.	Longfellow av.	Artificial	14.5	8	12	5.5	.35		1,248.4	436.94	385.46
32nd av S	22nd st.	24th st.	Artificial	14.5	8	12	5.5	.35		2,520.2	882.07	821.84
32nd av S	33rd st.	35th st.	Artificial	14.5	8	12	5.5	.35		5,384.9	1,894.71	1,718.64
32nd st	14th av S	22nd av S	Artificial	14.5	8	12	5.5	.35		556.9	194.57	178.60
32nd st	Fremont av.	Humboldt av.	Artificial	14.5	8	12	5.5	.35		4,879.2	1,707.72	1,605.98
33rd st E	14th av	21st av.	Artificial	14.5	8	12	5.5	.35		720.7	262.25	250.25
33rd st E	Snelling av	Minneapolis av.	Artificial	14.5	8	12	5.5	.35				

33rd st W	Emerson av	Girard av	14 5	8	12	5 5	35	632 71	221 44	202 79
34th st E	21st av S	23rd av S	14 5	8	12	5 5	35	1 746 9	611 41	487 06
34th st W	Emerson av	Hennepey av	14 5	8	12	5 5	35	6 900 6	206 71	179 90
35th st E	11th av S	21st av S	14 5	8	12	5 5	35	6 900 1	2 415 04	1 909 00
36th st S	39th st	40th st	14 5	8	12	5 5	35	1 291 4	451 99	1 404 46
36th st E	Hixwatha av	45th st	14 5	8	12	5 5	35	1 260 8	94 30	88 24
37th av S	Park av	Lake st	14 5	8	12	5 5	35	1 205 5	421 92	398 37
38th st E	29th st	Oakland av	14 5	8	12	5 5	35	1 295 3	103 36	82 25
39th st E	Nicollet av	3rd av S	14 5	8	12	5 5	35	1 831 1	640 88	637 70
39th st E	12th av SE	Bloomington av	14 5	8	12	5 5	35	1 379 8	482 93	606 69
Talmage av	10th av SE	N P Tracks	14 5	8	12	5 5	35	5 055 2	1 769 32	1 611 22
Thomas av N	14th av	19th av	14 5	8	12	5 5	35	1 885 3	659 86	636 02
Thomas av S	39th st	Lake Calhoun	14 5	8	12	5 5	35	1 297 8	662 62	618 17
Upton av N	14th av	16th av	14 5	8	12	5 5	35	1 342 8	454 23	422 84
Upton av S	43rd st	Railroad	14 5	8	12	5 5	35	1 313 9	110 98	107 35
Upton av S	45th st	46th st	14 5	8	12	5 5	35	2 476 2	459 86	206 68
Upton av S	48th st	50th st	14 5	8	12	5 5	35	2 398 8	866 67	834 26
Vincent av S	45th st	47th st	14 5	8	12	5 5	35	2 398 8	837 83	801 92
Walnut st	Beacon st	N P Ry	14 5	8	12	5 5	35	3 176 2	76 09	64 40
Washington av S	47th st	50th st	14 5	8	12	5 5	35	3 176 2	1 111 67	1 145 83
Washington av N	34th av	38th av	20			5 5	35	2 619 6	916 86	820 75
Washington st	19th av NE	22nd av NE	14 5	8	12	5 5	35	1 634 2	571 97	544 95
Yale av	Huron st	Thornton st	14 5	8	12	5 5	35	1 558 8	545 58	520 21
York av S	46th st	47th st	14 5	8	24	5 5	35	86 1	655 38	636 44
Zenith av S	46th st	47th st	14 5	8	36	5 5	62	811 5	221 44	409 64
Total								373 873 1	\$126,040.82	\$128,755.74

\*Charge to Ward Fund.

\*Charge to P. I. Fund.

SUMMARY		Miles	Cost	Total
Artificial curb built by city		69.654	125,787 78	
Artificial curb built by owner		3.846	7,107 38	\$132,895.16
Granite built by city				
Curb moved by city		1.156		853.04
Curb repairs				2,005.07



TABLE No. 21

SUMMARY OF ALL CURB AND GUTTER SET AND IN PLACE JANUARY 1, 1916

	Number		Length		Cost
	Curb Cor- ners	Catch Basin Covers	Miles and 1000ths	Feet and 100ths	
Kettle River sandstone.....			60,160	317,661.00	\$282,434.95
*Limestone.....			26,103	137,825.00	176,971.16
Combined curb and gutters, artificial.....			679,289	3,586,467.50	1,342,926.81
Granolithic curb, artificial.....			3,063	16,174.58	11,425.67
Cement curb, artificial.....			.0446	2,356.20	2,308.98
Granite curb.....			40,156	212,037.00	193,701.72
**Catch basin covers.....		1,007			
**Curb corners.....	688				
Total curb, curb covers and catch basin covers set in the city.....	688	1,007	809,217	4,272,521.28	\$2,009,769.29
Limestone curb, corners and catch basins replaced by granite.....	342	524	18,716	98,823.27	\$126,015.86
Limestone curb, corners and catch basin covers replaced by sandstone.....	113	232	1,809	9,551.13	13,285.90
Total limestone curb, corners and catch basin covers replaced by other curb.....	455	752	20,525	108,374.40	139,301.76
Total curb, corners and covers in place in the city.....	233	250	788,695	4,164,146.88	1,870,467.53

\*Total number of feet in city previous to 1900.

\*\*Total number set in the city previous to 1900

TABLE NO. 22.

## INVENTORY ARTIFICIAL CURB AND GUTTER TOOLS, 1915

Street corner molds, 45; driveway molds, 20; gutter molds, 3,120 feet; wood box wheelborrows, 14.....	\$170.15
Iron box wheelborrows, 5; tool boxes, 15; picks, 108; handles, 88; mixing hoes, 2; shovels, 125; scoop shovels, 27; rubber hose, 450 feet; gutter spreaders, 136; mold spreaders, 159; hand saws, 6; sand screens, 3; cobble, 35 feet..	2 0.37
Sprinkling cans, 8; water pails, 9; water barrels, 1; street molds, 1,696 feet; snips, 2; carpenter squares, 2.....	243.14
Pointed trowels, 8; smoothing trowels, 10; gutter trowels, 6; round corner trowels, 9; lanterns, 80; globes, 71.....	53.30
Oil cans, 24; grub axes, 3; hand axes, 4; long handled axes, 4.....	15.60
Tin funnels, 1; jack planes, 3; tarpaulins, 15; files, 7; 24 inch hook clamps, 31; 12 inch hook clamps, 94; 12 inch spring clamps, 119; steel stakes, 490; wooden stakes, 251; saw sets, 1; wedges, 10.....	88.25
Mold links, 79; cutting knives, 5; tin cement duster, 1; spirit levels, 10; masons, lines, 6; branding irons, 4; ampere meters, 3; tampers, 8.....	65.77
Concrete power mixers, 8; concrete hand mixers, 1.....	1,741.80
Crow bars, 8; cold chisels, 6; B. S. hammers, 15; sand heaters, 2; rolls of building paper, 25; sledge hammers, 8; claw hammers, 3; 1-inch iron pipe, 2848 feet, churndrills, 2.....	140.79
Plows, 5; pinchers, 1; pliers, 3; screwdrivers, 2; slush scrapers, 5; wrenches, 17; plow points, 10; platforms, 7.....	112.85
Total.....	\$3,098.02

TABLE No. 24

SUMMARY OF SEWERS BUILT PRIOR TO JANUARY 1, 1916

Kind of Sewers	Size in Inches	Total Length		
		Feet	Feet	
A				
COMBINED SYSTEM				
Vitrified clay pipe.....	9	39,833.7	1,141,377.7	
Vitrified clay pipe.....	10	578.1		
Vitrified clay pipe.....	12	401,725.0		
Vitrified clay pipe.....	15	317,189.1		
Vitrified clay pipe.....	18	230,366.4		
Vitrified clay pipe.....	20	52,195.2		
Vitrified clay pipe.....	22	30,482.2		
Vitrified clay pipe.....	24	48,120.9		
Vitrified clay pipe.....	27	13,114.1		
Vitrified clay pipe.....	30	6,142.9		
Vitrified clay pipe.....	33	1,630.1	134.7	
Cast iron pipe.....	16	134.7		
Cement pipe.....	12	96,421.5		169,645.5
Cement pipe.....	15	52,106.0		
Cement pipe.....	18	19,934.1		
Cement pipe.....	24	1,183.9		
Brick.....	18	46.7	561,078.8	
Brick.....	20	30.4		
Brick.....	24	285,460.3		
Brick.....	27	10,792.7		
Brick.....	30	72,176.7		
Brick.....	33	25,083.4		
Brick.....	36	40,056.2		
Brick.....	39	5,847.6		
Brick.....	40	3,872.2		
Brick.....	42	12,213.7		
Brick.....	44	3,675.5		
Brick.....	45	3,167.2		
Brick.....	48	8,201.5		
Brick.....	51	9,239.0		
Brick.....	54	11,624.5		
Brick.....	60	21,011.4		
Brick.....	63	1,318.6		
Brick.....	65	3,215.6		
Brick.....	66	3,311.3		
Brick.....	72	10,463.1		
Brick.....	75	1,309.9		
Brick.....	78	1,688.7		
Brick.....	80	466.0		
Brick.....	84	1,296.6		
Brick.....	86	1,604.0		
Brick.....	87	590.3		
Brick.....	90	7,781.3		
Brick.....	93	978.9		
Brick.....	96	14,555.5		
Reinforced concrete.....	36	11,549.2		
Reinforced concrete.....	39	3,508.8		
Reinforced concrete.....	42	13,885.8		
Reinforced concrete.....	45	2,509.0		
Reinforced concrete.....	48	7,849.2		
Reinforced concrete.....	51	4,173.8		
Reinforced concrete.....	52	2,139.8		
Reinforced concrete.....	54	8,893.0		
Reinforced concrete.....	57	4,799.3		
Reinforced concrete.....	60	11,221.5		
Reinforced concrete.....	63	2,599.0		
Reinforced concrete.....	66	10,676.5		
Reinforced concrete.....	69	1,158.1		
Reinforced concrete.....	72	10,465.5		
Reinforced concrete.....	75	2,020.9		
Reinforced concrete.....	77	400.5		
Reinforced concrete.....	78	2,207.2		

TABLE No. 24—Continued

SUMMARY OF SEWERS BUILT PRIOR TO JANUARY 1, 1916—Cont.

Kind of Sewers	Size in Inches	Total Length	
		Feet	Feet
<b>A</b>			
<b>COMBINED SYSTEM—Continued</b>			
Reinforced concrete.....	90	6,984.9	123,634.9
Reinforced concrete.....	99	2,922.1	
Reinforced concrete.....	105	2,612.9	
Reinforced concrete.....	111	7,383.8	
Reinforced concrete.....	120	3,674.1	
<b>B</b>			
<b>SEPARATE SYSTEM</b>			
Vitrified clay pipe.....	9	26,581.2	54,246.5
Vitrified clay pipe.....	12	7,718.3	
Vitrified clay pipe.....	15	4,170.4	
Vitrified clay pipe.....	18	6,098.3	
Vitrified clay pipe.....	24	9,678.3	
Cement pipe.....	12	622.6	1,268.4
Cement pipe.....	15	645.8	
<b>C</b>			
<b>STORM WATER SYSTEM</b>			
Vitrified clay pipe.....	24	329.0	2,958.7
Vitrified clay pipe.....	27	630.5	
Vitrified clay pipe.....	30	1,999.2	
Galvanised iron pipe.....	30	245.1	245.1
Total number of feet.....			2,054,590.3
Total number of miles.....			389,127
Total number of manholes.....			14,335
Total number of lampholes.....			485
Total number of catch basins.....			9,209
Total number of flush tanks.....			81

**TABLE No. 26**  
**MAINTENANCE AND REPAIRS OF SEWERS FOR 1915**

Cleaning sewers .....	\$27,443.37
Flushing sewers .....	3,923.78
Examining sewers .....	3,015.20
Thawing catch basins .....	2,946.65
Examining and cleaning catch basins .....	1,787.93
Care of city barn .....	217.33
Care of autos .....	271.25
Repairing catch basins, manholes and drains .....	1,626.42
Repairing sewers .....	5,157.09
Court Case, Court Appeal and Court Reporter .....	132.00
Repairs to paving at 6th av N and Aldrich av .....	88.40
Drilling down at 10th av S and 6th st .....	72.76
Settlement of damage case caused by auto .....	133.52
New work on barn and yard .....	184.85
Fire insurance .....	98.36
	<hr/>
	\$47,098.91

**TABLE No. 27**  
**SUMMARY OF SEWERS BUILT IN 1915**

Kind of Sewers	Size in Inches	Length in Feet
Vitrified clay pipe.....	9	603.3
Vitrified clay pipe.....	12	35,609.6
Vitrified clay pipe.....	15	18,616.6
Vitrified clay pipe.....	18	16,933.2
Vitrified clay pipe.....	20	9,486.8
Vitrified clay pipe.....	22	5,343.9
Vitrified clay pipe.....	24	5,818.4
Vitrified clay pipe.....	27	1,979.5
Vitrified clay pipe.....	30	791.1
Galvanized iron pipe.....	30	245.1
Reinforced concrete egg.....	48	887.9
Reinforced concrete circular.....	51	1,990.4
Reinforced concrete circular.....	63	661.5
Reinforced concrete circular.....	66	1,686.6
Reinforced concrete circular.....	72	651.1
Total number feet.....		101,305.0
Total number miles.....		19,186.0

TABLE No. 28—Continued  
SEWERS CONSTRUCTED AND ASSESSED DURING THE SEASON OF 1915

STREET	FROM	TO	Size in Inches	Kind	Shape	Length in Feet	No. of Man- holes	No. of Catch- basins	Cost	Amount of Assess- ment
Gramercy av.	2nd av N.	N line lot 6 SE Adams Homestead.	12	Pipe	Circular	290.5	2	...	1,008.23	631.50
Grand av.	40th st.	41st st.	24	Pipe	Circular	659.7	10	8	5,618.84	3,553.35
Grand av.	41st st.	42nd st.	22	Pipe	Circular	662.7	...	...	...	...
Harnet av.	40th st.	41st st.	24	Pipe	Circular	661.1	5	2	4,138.47	1,756.20
Holmes av.	Lagoon av.	The Mall	12	Pipe	Circular	128.3	1	...	485.42	315.00
Humboldt av S.	29th st.	Lake st.	12	Pipe	Circular	173.3	1	...	608.30	246.00
Jefferson st.	22nd av NE	24th av NE	27	Pipe	Circular	782.4	14	5	11,377.37	2,816.40
Jefferson st.	24th av NE	Lowry av NE	24	Pipe	Circular	362.8	...	...	...	...
Jefferson st.	Lowry av NE	26th av NE	18	Pipe	Circular	660.5	...	...	...	...
Kenwood Parkway	Dupont av S.	NE cor lot 12 Haskella sub of blk 4 Lakeview Add.	12	Pipe	Circular	1,834.9	14	...	5,428.43	2,538.00
"L" st.	Division st.	Traffic st.	22	Pipe	Circular	310.9	9	...	5,844.91	3,774.60
"L" st.	Traffic st.	Spring st.	20	Pipe	Circular	1,003.3	...	...	...	...
Lagoon av.	Humboldt av S.	Holmes av	15	Pipe	Circular	332.7	2	4	1,516.14	724.65
Laurel av.	Cedar Lake Road	Russell av N.	20	Pipe	Circular	547.3	7	12	6,760.44	2,326.35
Laurel av.	Russell av N.	Thomas av N.	18	Pipe	Circular	674.7	...	...	...	...
Laurel av.	Living av N.	Elm st.	48	Pipe	Reinf. Con.	887.9	6	...	22,782.27	...
Lowry av NE	Jefferson st.	Washington st.	18	Pipe	Circular	304.0	2	...	1,320.07	742.20
Lowry av NE	Lincoln st.	Alley bet. Lincoln and Johnson sts.	9	Pipe	Circular	176.9	1	...	471.24	260.91
Lyndale av S.	40th st.	41st st.	18	Pipe	Circular	660.0	10	7	6,585.96	3,557.10
Lyndale av S.	41st st.	42nd st.	15	Pipe	Circular	664.2	...	...	...	...
McKinley st.	19 av NE	22 av NE	12	Pipe	Circular	650.3	5	...	1,613.91	1,326.87
Nicollet av.	38th st.	39th st.	12	Pipe	Circular	611.6	5	...	1,475.13	...
Nicollet av.	39th st.	42nd st.	51	Reinf. Con.	Egg	1,990.4	9	...	22,729.59	5,179.20
19th av NE	Jackson st.	50 ft. E. of Alley bet. Jackson and Central	12	Pipe	Circular	288.2	2	...	695.67	456.28
19th av NE	Hayes st.	Stinson Boulevard	12	Pipe	Circular	1,981.5	18	...	6,747.52	4,610.55
Penn av N.	Cedar Lake Road	Hawthorne av	12	Pipe	Circular	588.1	5	1	1,611.11	...
Pillsbury av.	40th st.	41st st.	15	Pipe	Circular	739.1	6	2	2,104.59	1,753.84
Pleasant av.	40th st.	41st st.	18	Pipe	Circular	670.5	10	3	4,031.45	3,552.15
Pleasant av.	41st st.	42nd st.	15	Pipe	Circular	655.0	...	...	...	...
Queen av N.	36th av N.	S line lot 8 Utopia Add	12	Pipe	Circular	392.1	3	...	914.13	785.94
Russell av N.	Laurel av	Hawthorne av	12	Pipe	Circular	650.4	5	2	1,710.45	...

St. Marys av.	Williams av.	Essex st.	15	Pipe	Circular	503.21	3	2,892.46
St. Marys av.	Essex st.	SW cor 1st, 5, blk 2	12	Pipe	Circular	413.91	8	1,844.91
Stevens av.	39th st.	Meeker Place Add.	12	Pipe	Circular	392.5	5	1,516.73
2nd av S.	39th st.	38th st.	12	Pipe	Circular	393.4	5	1,799.55
2nd st N.	21st av N.	22nd av N.	30	Pipe	Circular	440.9	2	
2nd st SE.	2nd av SE.	1st av SE.	18	Pipe	Circular	332.1	3	1,608.03
2nd st SE.	4 way bot. 2 & 3 av SE.	3rd av SE.	12	Pipe	Circular	412.5	4	2,597.52
6th st S.	3rd av SE.	4th av SE.	12	Pipe	Circular	312.2	2	
16th av N.	24th av S.	23rd av S.	18	Pipe	Circular	326.9	2	908.10
16th av S.	Thomas av.	Upton av.	18	Pipe	Circular	326.2	4	1,432.71
16th av S.	38th st.	39th st.	15	Pipe	Circular	665.2	5	4,982.45
17th av S.	38th st.	40th st.	15	Pipe	Circular	665.2	6	3,547.61
17th av S.	39th st.	40th st.	12	Pipe	Circular	665.2		
Taft st.	Division st.	Winter st.	24	Pipe	Circular	607.5		
Taft st.	Winter st.	Spring st.	20	Pipe	Circular	714.2	19	10,419.70
Taft st.	Spring st.	Summer st.	18	Pipe	Circular	662.0		
Taft st.	Summer st.	Broadway st.	15	Pipe	Circular	649.4		
Thomas av.	Laurel av.	Cedar Lake Road	18	Pipe	Circular	884.7	4	4,757.13
3rd st N.	8th av N.	SE line lot 9, blk 25						
		Bedford and Lewis						
3rd st NE.	Lowry av NE.	20th av NE.	12	Pipe	Circular	210.6	2	733.36
12th av S.	22nd st.	23rd st.	20	Pipe	Circular	27.1	3	2,796.48
20th av NE.	2nd st NE.	3rd st NE.	12	Pipe	Circular	274.9	2	665.84
21st av N.	Girard av.	Irving av.	12	Pipe	Circular	299.0	2	928.80
22nd st E.	Chicago av.	66 ft. E. of Columbus av.	12	Pipe	Circular	353.8	3	1,088.38
22nd st E.	10th av S.	50 ft. E. of Elliot av.	12	Pipe	Circular	245.8	2	803.35
22nd st W.	Lake of Isles	115 ft. E. of Iles Blvd.	12	Pipe	Circular	287.2	2	868.81
22nd st W.	Lake of Isles Blvd.	Humboldt av.	30	Gal. Iron.	Round	245.1		
22nd st W.	Humboldt av S.	Fremont av S.	30	Clay Pipe.	Circular	791.	1	11,368.95
22nd st W.	Fremont av S.	Emerson av S.	27	Clay Pipe.	Circular	630.5		
23rd av NE.	2nd st NE.	3rd st.	24	Clay Pipe.	Circular	329.0		
24th av NE.	Madison st.	Howard st.	12	Clay Pipe.	Circular	322.1	3	918.23
24th st E.	31st av S.	32nd av S.	12	Clay Pipe.	Circular	307.2	4	808.54
24th st E.	33rd av S.	32nd av S.	12	Clay Pipe.	Circular	325.9		1,829.54
25th av N.	Lyndale av N.	115 ft. E. of Aldrich av.	12	Clay Pipe.	Circular	318.7	6	
26th av NE.	Lincoln st.	Johnson st.	12	Clay Pipe.	Circular	252.2	2	713.01
26th av SE.	Talmage av.	Division st.	12	Clay Pipe.	Circular	234.5	2	637.66
26th av S.	Lake st.	Minnehaha av.	15	Clay Pipe.	Circular	661.9	5	1,541.39
27th av S.	38th st.	39th st.	22	Clay Pipe.	Circular	404.9	4	1,829.24
27th av SE.	Essex st.	Delaware st.	15	Pipe	Circular	641.0	3	3,334.05
28th av NE.	Fillmore st.	Pierce st.	12	Pipe	Circular	412.6	4	2,049.47
						259.2	3	852.11



TABLE No. 28—Continued  
SEWERS CONSTRUCTED AND ASSESSED DURING THE SEASON OF 1915

STREET	FROM	TO	Size in Inches	Kind	Shape	Length in Feet	No. of Man- holes	No. of Catch- basins	Cost	Amount of Assess- ment
26th st W	Citard av	E. line lot 8 blk 1 Cre and Channels Add.	12	Pipe	Circular	164.5	1	.....	469.47	.....
26th st W	Pillsbury av	Pleasant av.	12	Pipe	Circular	247.5	3	.....	897.13	.....
26th st W	38th st	40th st	22	Pipe	Circular	650.6	10	7	5,355.18	.....
26th st W	39th st	40th st	20	Pipe	Circular	659.9	3	.....	796.39	.....
26th st W	41st st	DuPont av	12	Pipe	Circular	308.3	3	.....	572.66	.....
26th st W	42nd st	17th av	12	Pipe	Circular	116.4	1	.....	1,633.44	.....
26th st W	43rd st	24th st	15	Pipe	Circular	492.7	4	.....	6,836.68	.....
26th st W	44th st	32nd st	12	Pipe	Circular	487.5	14	6	6,953.82	.....
26th st W	45th st	33rd st	20	Pipe	Circular	676.7	13	12	5,514.34	.....
26th st W	46th st	41st st	18	Pipe	Circular	442.7	10	4	2,132.02	.....
26th st W	47th st	42nd st	15	Pipe	Circular	658.6	4	3	871.83	.....
26th st W	48th st	43rd st	15	Pipe	Circular	656.7	2	3	2,476.56	.....
26th st W	49th st	25th st	18	Pipe	Circular	638.8	2	4	1,189.19	.....
26th st W	50th st	24th st	15	Pipe	Circular	658.1	2	4	1,330.99	.....
26th st W	51st st	27th st	12	Pipe	Circular	571.5	9	2	1,237.79	.....
26th st W	52nd st	25th to rd Pleasant av	12	Pipe	Circular	205.5	2	.....	3,462.71	.....
26th st W	53rd st	37th st	15	Pipe	Circular	570.9	4	.....	7,358.68	.....
26th st W	54th st	Queen av	20	Pipe	Circular	321.4	2	.....	1,488.34	.....
26th st W	55th st	Bryant av	22	Pipe	Circular	321.6	2	.....	2,356.77	.....
26th st W	56th st	22nd av NE	12	Pipe	Circular	578.5	4	.....	1,186.62	.....
26th st W	57th st	20th av NE	12	Pipe	Circular	657.7	9	.....	8453,830.48	.....
26th st W	58th st	20th av	12	Pipe	Circular	598.9	17	3	.....	.....
26th st W	59th st	17th av	18	Pipe	Circular	594.4	4	.....	.....	.....
26th st W	60th st	19th av	12	Pipe	Circular	669.0	5	.....	.....	.....
26th st W	61st st	McNair av	12	Pipe	Circular	301.3	2	.....	.....	.....
26th st W	62nd st	N line lot 28 Quirk and Harrups Add.	12	Pipe	Circular	499.8	4	.....	.....	.....
26th st W	63rd st	20th av NE	18	Pipe	Circular	651.5	5	.....	.....	.....
26th st W	64th st	SE cor lot 4 blk 1 Oak- hurst Add	12	Pipe	Circular	292.9	2	.....	.....	.....
26th st W	65th st	.....	.....	.....	.....	99,081.9	723	293	.....	.....

[illegible]

TABLE No. 28—Continued  
FINANCIAL SUMMARY FOR 1915

Assessed sewers including 150 estimated catch basins built in 1916.....				\$453,830.48
Non-assessed sewers (Inter-section on Quincy st. at Broadway.....				296.15
Changing catch basins, manholes and drains (Drains on 42nd st., Milwaukee, 34th av S.....				5,719.51
(due to new paving, G. and C. and C.....				15,918.23
Actual cost of 240 catch basins left over from 1914 and before.....				11,329.97
Cost of spur track for 26th st sewer yard.....				2,890.69
Cost of blacksmith shop for 26th st sewer yard.....				1,666.14
New catch basins and changing done for Milwaukee, G. N. and R. T. Rys., Telephone and Gas Cos.....				2,886.06
Bond Fund sale expenses.....				66.93
Personal injury expenses.....				52.50
Cement inspection for side walk left.....				265.03
				<hr/>
				\$495,672.69
Warehouse and yard inventory January 1, 1916.....	\$61,359.42			
General account.....	6,044.62			
				<hr/>
				\$67,404.04
Warehouse and yard inventory January 1, 1915.....	\$65,288.50			
General account inventory January 1, 1915.....	6,259.72			
				<hr/>
				\$71,548.22dec.
Less estimated cost of 150 catch basins for 1916.....				4,144.18
Less Division st sewers and interconnections paid by special street improvement No. 62.....				6,750.00
Less new catch basins changing paid for by Milwaukee, G. N., R. T. Rys., Telephone and Gas Co.....				5,719.51
				<hr/>
				2,886.06
				<hr/>
				\$19,499.75
				<hr/>
				\$476,172.94

\*Paid for by Special Street Improvement No. 62.

Drains on 42nd st E..	Minnehaha av .....	38th av S .....	12	Pipe .....	Circular .....	210.0	1	3	751.0
Intersection on Quincy	st at Broadway st .....	toward 7th st .....	15	Pipe .....	Circular .....	56.6	3		286.15
E Hennepin av .....	8th st SE .....		12	Pipe .....	Circular .....	322.5			997.59
(New Central)									
E Hennepin av .....	Crossing at Tyler st .....		12	Pipe .....	Circular .....	51.0			231.35
(Division st)									
E Hennepin av .....	Crossing at Polk st .....		12	Pipe .....	Circular .....	47.5			117.68
E Hennepin av .....	Crossing at 5th av SE .....		18	Pipe .....	Circular .....	49.0		1	243.28
E Hennepin av .....	Taylor st .....		12	Pipe .....	Circular .....	180.5			635.07
E Hennepin av .....	Pierce st .....	blk easterly .....	12	Pipe .....	Circular .....	174.5			492.44
E Hennepin av .....	Johnson st .....	blk westerly .....	12	Pipe .....	Circular .....	177.1			490.85
E Hennepin av .....	11th av SE .....	blk easterly .....	12	Pipe .....	Circular .....	172.0			366.69
E Hennepin av .....	12th av SE .....	blk easterly .....	12	Pipe .....	Circular .....	168.9			378.14
E Hennepin av .....	Crossing at .....	13th av SE .....	15	Pipe .....	Circular .....	56.0			186.35
E Hennepin av .....	14th av SE .....	blk easterly .....	12	Pipe .....	Circular .....	166.5			519.95
E Hennepin av .....	15th av SE .....	blk easterly .....	12	Pipe .....	Circular .....	168.0			394.88
E Hennepin av .....	Crossing northerly at .....	16th av SE .....	12	Pipe .....	Circular .....	57.0			656.24
E Hennepin av .....	16th av SE .....	blk easterly .....	12	Pipe .....	Circular .....	167.0			
						101,305.0	735	297	\$460,597.14

\*5,719.51

TABLE No. 28—Continued  
FINANCIAL SUMMARY FOR 1915

Assessed sewers including 150 estimated catch basins built in 1916.			\$453,830.48
Non-assessed sewers { Intersection on Quincy st. at Broadway.			290.15
Changing catch basins, manholes and drains. { Division at Intersection and sewers for Central av. to 16th av. SE under Street Improvement No. 62.			5,710.51
Drains on 42nd st. Minnehaha, 38th av. S.			751.00
due to new paving, G. and C. and C.			15,018.23
Actual cost of 240 catch basins left over from 1914 and before.			11,320.07
Cost of spur track for 26th st sewer yard.			2,800.00
Cost of blacksmith shop for 26th st sewer yard.			1,000.14
New catch basins and changing done for Milwaukee, G. N. and R. T. Rys., Telephone and Gas Cos.			2,880.00
Bond Fund sale expenses.			60.93
Personal injury expenses.			52.50
Cement inspection for side walk left.			205.03
			\$495,072.00
Warehouse and yard inventory January 1, 1916.	\$61,350.42		
General account.	0,044.62		
		\$67,401.01	
Warehouse and yard inventory January 1, 1915.	\$65,288.50		
General account inventory January 1, 1915.	0,250.72		
		\$71,518.22	
Less estimated cost of 150 catch basins for 1916.			4,144.18
Less Division at sewers and interconnections paid by special street improvement No. 62.			0,750.00
Less new catch basins changing paid for by Milwaukee, G. N., R. T. Rys., Telephone and Gas Cos.			5,710.51
			2,880.00
			\$10,400.75
			\$470,172.04

\*Paid for by Special Street Improvement No. 62.

TABLE No. 29  
SEWER CONNECTIONS AND MILEAGE OF SEWERS BY WARDS

First.....	1,110	95	1,205	14.559	1.087	15.646	2.619	77.0
Second.....	2,292	138	2,430	29.489	1.238	30.727	0.561	79.0
Third.....	4,783	340	5,123	50.510	0.822	51.332	0.142	99.8
Fourth.....	3,424	128	3,552	38.308	1.319	39.627	0.539	89.6
Fifth.....	2,756	66	2,822	23.489	0.100	23.589	1.232	119.6
Sixth.....	973	38	1,011	10.320	0.060	10.380	0.398	97.4
Seventh.....	3,133	324	3,457	30.148	0.858	31.006	.....	111.5
Eighth.....	6,207	243	6,450	51.554	0.670	52.224	.....	123.5
Ninth.....	2,626	287	2,913	32.011	3.200	35.211	0.352	82.7
Tenth.....	2,002	353	2,355	29.839	1.679	31.518	.....	74.7
Eleventh.....	2,179	116	2,295	18.352	0.113	18.465	0.042	124.3
Twelfth.....	1,519	432	1,951	25.947	3.378	29.325	0.205	82.7
Thirteenth..	1,008	546	1,554	15.393	4.662	20.055	.....	77.7
Totals.....	34,012	3,106	37,118	369.919	19.186	389.105	6.090	95.4

TABLE No. 32

## OLD SEWER INVENTORY JANUARY 1, 1916

IN SEWER DEPARTMENT WAREHOUSE AND YARDS AT 1911 EAST 26th ST.

Miscellaneous Tools .....	3,164.82
Office Fixtures .....	171.00
Wagons and harness .....	533.40
Horses .....	1,600.00
Hay and feed .....	22.95
Step irons .....	12.30
Autos and auto trucks .....	4,240.32
Fire hose, etc. ....	1,449.45
Motor .....	70.50
Oils .....	5.80
Lumber .....	471.82
Castings .....	1,084.31
Steamers .....	1,275.00
Sewer pipe .....	33.20
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	\$14,134.37

TABLE No. 32—Continued

INVENTORY OF TOOLS, MACHINERY, MATERIAL, ETC., JANUARY 1, 1916  
IN SEWER DEPARTMENT NEW WAREHOUSE AND YARDS AT 1911 E 26th ST.

Mark		
B	16 H. P. double boom machine.....	Steam
C	22 H. P. double boom machine.....	"
F	16 H. P. double boom machine.....	"
G	16 H. P. double boom machine.....	"
J	20 H. P. double boom machine.....	"
M	12 H. P. double boom machine.....	Gasoline
N	6 H. P. double boom machine.....	"
O	8 H. P. double boom machine.....	"
S	16 H. P. double boom machine.....	Steam
E	20 H. P. Chic cube concrete mixer.....	"
H	20 H. P. Smith's concrete mixer.....	"
V	20 H. P. Milwaukee concrete mixer.....	"
K	6 H. P. Smith's concrete mixer.....	Gasoline
L	6 H. P. Peerless mixer.....	"
V	4½ H. P. Wonder mixer.....	"
T	16 H. P. new pile driver.....	"
D	20 H. P. pump centrifugal.....	Steam
I	16 H. P. pump centrifugal.....	"
W	20 H. P. pump centrifugal, new.....	"
P	16 H. P. drill steamers.....	
Q	16 H. P. drill steamers.....	
New Boiler; V. P. Mud pump, 3½ Gas; 6 Parker Contract; Fairbanks Engine; Westman air compressor; conveyor brick motor, 7½ H. P.; motor ½; 2 con- crete mixer platforms; 200 ft. car track for same; 2,000 ft. car rail heavy; 780 ft. car rail, light; 3 car track switches; 150 track splices; 400 track spikes; 300 track bolts; track wrenches, 8; dump cars, iron frames, 12; dump cars wooden frames, 2; diaphragm rubbers, 40; diaphragm rubbers, 120 ft; suction hose 3 inch, 300 ft.; discharge hose; 3 hand force pumps.....		
Lumber.....		25,309.30
Miscellaneous tools.....		6,387.08
		2,175.59
		<hr/>
General Account:		\$33,871.97
Sewer pipe.....		2,957.05
Cement.....		4.80
Brick.....		492.90
		<hr/>
		\$3,454.75
New 26th st warehouse and land.....		\$37,326.72



TABLE No. 32—Continued

INVENTORY OF TOOLS, MACHINERY, MATERIAL, ETC., JANUARY, 1, 1916  
IN SEWER DEPARTMENT WAREHOUSE AND YARDS AT 1621 MONROE St. NE

1 Fairbank 6 H. P. gas; Fairbank No. 785, 6 H. P. engine on runners; 2 North Star steam boilers; Ramsey steam pump, old; Concrete mixer; old pile driver; Knowels steam pump, old; 1 platform; concrete, wheels, etc.; Complete stone crusher, Indian Machine Co.; 11 diaphragm pumps; 13 sand pumps; 1 testing pump; 3 Rotary pumps; pump frame old	\$3,118.56
Miscellaneous tools	13,924.45
Concrete centers and forms	2,854.40
Lumber	7,590.04
	<hr/>
General Account:	\$27,487.45
Brick and Cement	876.08
Sewer pipe	1,713.79
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	\$2,589.87

TABLE No. 33.  
SUMMARY OF CEMENT TESTED DURING SEASON OF 1915

BRAND OF CEMENT	LOCATION OF MILLS	Number of Barrels Inspected	Tensile Strain Per Square Inch				Per Cent of Fineness		Time of Setting			Per Cent of Water Used		Cement Rejected	
			Neat		1 Cement, 3 Sand, by Weight		50 Mesh	100 Mesh	Initial	Final	Neat	1 & 3	No. of Bbls.	Per Cent.	
			7 Days	30 Days	7 Days	30 Days									
Lehigh.....	Mason City, Ia.	82,000	719	775	303	432	94.60	77.10	3	00	3	22	9.2	.....	.....
N. W. States.....	Mason City, Ia.	76,000	715	728	307	416	94.85	77.90	3	06	6	22	9.2	.....	.....
Ash Grove.....	Chanute, Kans.	1,200	798	900	327	453	96.48	82.83	2	58	5	22	9.2	.....	.....
Universal.....	Chicago, Ill.	600	607	672	243	377	96.86	78.85	2	50	6	22	9.2	.....	.....
Atlas "White".....	Northampton, Pa.	600	696	735	339	464	99.90	89.60	1	45	5	22	9.2	.....	.....
Chicago "A. A.".....	Oglesby, Ill.	400	750	832	270	393	96.15	79.25	2	40	6	22	9.2	.....	.....
Hawkeye.....	Des Moines, Ia.	200	678	871	302	447	93.20	81.50	2	50	6	22	9.2	.....	.....
Total barrels.....		161,000													

All tests according to American Society Testing Material Standards.

TABLE No. 35  
AVERAGE TENSILE STRENGTH PER SQUARE INCH FOR PORTLAND CEMENT FOR 5 YEARS, 3 YEARS, 1 YEAR, AND 6 MONTHS

BRAND	NEAT CEMENT												ONE PART OF CEMENT, THREE PARTS STANDARD SAND											
	7 Days		30 Days		60 Days		90 Days		4 Mos.		6 Mos.		1 Year		2 Years		3 Years		4 Years		5 Years			
	Days	Years	Days	Years	Days	Years	Days	Years	Days	Years	Days	Years	Days	Years	Days	Years	Days	Years	Days	Years	Days	Years		
N. W. States.....	702		761		754		755		729		764		770		723		762		798		874			
Atlas.....	687		654		725		835		952		960		898		770		832		955		874			
Huron.....	594		883		858		860		871		885		751		861		717		840		907			
Alpha.....	731		738		740		750		771		772		674		908		773		871		854			
Gibraltar.....	784		839		845		850		854		855		856		746		659		728		730			
Elk Rapids.....	767		734		750		760		850		810		821		759		707		848		873			
Universal.....	663		700		730		725		727		705		674		724		983		800		747			
Chicago "A. A.".....	796		878		879		880		854		860		885		743		781		779		796			
Medusa.....	646		835		840		860		934		931		919		797		818		885		944			
Lehigh.....	713		810		717		780		804		809		641		762		649		.....		225			
Chicago "A. A.".....	579		645		834		830		832		804		748		786		822		.....		142			
Universal.....	662		767		727		740		749		774		759		777		817		.....		192			
Continental.....	550		761		810		819		856		761		818		956		808		.....		162			
N. W. States.....	734		735		727		721		712		706		685		751		693		.....		231			
N. W. States.....	681		661		764		765		711		702		655		655		.....		.....		283			
Lehigh.....	652		738		808		842		805		772		750		772		655		.....		269			
Chicago "A. A.".....	710		806		844		764		776		831		673		733		802		.....		302			
Continental.....	637		836		928		840		876		836		862		777		732		.....		253			
Universal.....	556		652		732		727		689		672		677		677		677		.....		215			
Atlas.....	537		664		717		690		773		718		696		717		696		.....		197			
Medusa.....	501		773		808		787		780		779		819		780		779		.....		178			
Red Ring.....	576		681		719		730		701		727		697		697		697		.....		215			
Marquette.....	575		702		719		723		730		749		786		786		786		.....		165			
Ash Grove.....	588		921		851		819		816		757		757		757		757		.....		309			
Hawkeye.....	718		839		909		788		848		822		.....		.....		.....		.....		281			
Atlas "White".....	672		766		764		664		671		722		722		722		722		.....		364			

St. Marys av.	Williams av.	Essex st.	15	Pipe	Circular.	503.2	8	3	2,892.46
St. Marys av.	Essex st.	SW cor. lot 5, blk 2	12	Pipe	Circular.	413.9	5	3	1,844.91
Stevens av.	39th st.	Meeker Place Add.	12	Pipe	Circular.	592.5	5	3	1,516.73
2nd av S	39th st.	38th st.	12	Pipe	Circular.	595.4	5	2	1,799.55
2nd st N	21st av N	22nd av N	12	Pipe	Circular.	440.9	3	2	1,608.03
2nd st SE	2nd av SE	1st av SE	18	Pipe	Circular.	358.0	3	4	2,597.32
2nd st SE	1 way bet. 2 & 3 av SE	3rd av SE	12	Pipe	Circular.	195.7	2	4	908.10
2nd st SE	3rd av SE	4th av SE	18	Pipe	Circular.	411.5	2	4	1,432.71
6th st S	24th av S	23rd av S	12	Pipe	Circular.	317.5	2	5	4,982.45
16th st N	Thomas av	Upton av.	18	Pipe	Circular.	326.1	10	6	3,547.61
16th av S	38th st.	39th st.	18	Pipe	Circular.	695.2	9	19	16,419.70
16th av S	38th st.	40th st.	15	Pipe	Circular.	695.3	7	4	4,757.13
17th av S	38th st.	39th st.	15	Pipe	Circular.	693.4	2	3	733.36
17th av S	39th st.	40th st.	12	Pipe	Circular.	607.5	5	3	2,798.48
Taft st.	Division st.	Winter st.	24	Pipe	Circular.	714.2	2	2	665.84
Taft st.	Winter st.	Spring st.	20	Pipe	Circular.	693.0	2	2	928.80
Taft st.	Spring st.	Summer st.	18	Pipe	Circular.	693.0	3	3	1,088.38
Taft st.	Summer st.	Broadway st.	15	Pipe	Circular.	649.4	2	2	803.35
Thomas av.	Laurel av	Cedar Lake Road	18	Pipe	Circular.	881.7	13	1	868.81
3rd st N	8th av N	SE line lot 9 blk 25 Bedford and Lewis Add	12	Pipe	Circular.	210.6	3	1	11,368.95
3rd st NE	Lowry av NE.	26th av NE	12	Pipe	Circular.	659.0	2	2	733.36
12th av S	22nd st.	23rd st.	12	Pipe	Circular.	27.1	5	3	2,798.48
20th av S	22nd st NE.	3rd st NE.	12	Pipe	Circular.	274.9	2	2	665.84
21st av NE	22nd st NE.	Irving av.	12	Pipe	Circular.	299.0	2	2	928.80
22nd st E	Chicago av.	66 ft. E of Columbus av	12	Pipe	Circular.	355.8	3	3	1,088.38
22nd st E	10th av S	50 ft. E of Elliot av	12	Pipe	Circular.	245.8	2	2	803.35
22nd st W	Lake of Isles	Lake of Isles blvd.	30	Pipe	Circular.	285.2	2	2	868.81
22nd st W	Lake of Isles blvd.	Humboldt av	30	Gal. Iron.	Round	245.1	13	1	11,368.95
22nd st W	Lake of Isles blvd.	Humboldt av S.	30	Clay Pipe.	Circular.	791	13	1	11,368.95
22nd st W	Humboldt av S.	Fremont av S.	27	Clay Pipe.	Circular.	630.5	3	3	918.23
22nd st W	Fremont av S.	Emerson av S.	24	Clay Pipe.	Circular.	329.0	3	2	808.54
23rd av NE	2nd st.	3rd st.	12	Clay Pipe.	Circular.	322.1	2	4	1,820.54
24th av NE	Howard st.	32nd av S.	12	Clay Pipe.	Circular.	307.2	6	2	1,820.54
24th av NE	Madison st.	32nd av S.	12	Clay Pipe.	Circular.	325.9	6	2	1,820.54
24th st E	31st av S.	32nd av S.	12	Clay Pipe.	Circular.	315.7	2	2	713.01
24th st E	33rd av S.	115 ft. E of Aldrich av	12	Clay Pipe.	Circular.	252.2	2	2	637.66
25th av N	Lyndale av N.	Johnson st.	12	Clay Pipe.	Circular.	234.5	5	3	1,541.39
26th av NE	Lincoln st.	Talmage av.	15	Clay Pipe.	Circular.	661.9	5	4	1,829.24
26th av SE	Talmage av.	Division st.	15	Clay Pipe.	Circular.	401.9	5	4	3,334.05
27th av S	Lake st.	Minnehaha av	15	Clay Pipe.	Circular.	641.0	3	3	2,049.47
27th av S	39th st.	Lake st.	22	Clay Pipe.	Circular.	412.6	2	2	852.11
27th av SE	Essex st.	Delaware st.	15	Pipe	Circular.	259.2	2	2	852.11
27th av NE	Fillmore st.	Pierce st.	12	Pipe	Circular.	259.2	2	2	852.11

TABLE No. 38  
SIDEWALK LAID DURING THE SEASON OF 1915

The cost of sidewalk is assessed to abutting property. Property owners are allowed to lay their own sidewalks subject to the inspection of this department.  
Stone walks laid by the city are laid by contract.

STREET	FROM	TO	SIDE	Width in Feet	LENGTH		
					Artificial Stone Laid by Owner Lineal Feet	Artificial Stone Laid by City Lineal Feet	Total Feet
1st ward—							
California st.	22nd av NE.	Lowry av.	Both.	6	440	1,149	1,589
Eastman av.	East Island av.	West Island av.	Both.	6	.....	25	25
8th av NE.	Sibley st.	5th st.	North.	6	66	21	87
4th st NE.	7th av.	17th av NE.	Both.	6	28	4	32
15th av NE.	Main st.	2nd st.	North.	8	13	.....	13
Grand st.	27th av NE.	31st av NE.	Both.	6	80	508	588
Island av.	Maple Place	Railroad	West.	6	.....	36	36
Lowry av NE.	2nd st.	University av NE.	South.	6	.....	11	11
Marshall st NE.	5th av.	29th av.	Both.	6	295	162	457
Main st NE.	3rd av.	4th av.	East.	6-8	.....	51	51
6th av NE.	Marshall st.	University av.	Both.	6	116	37	153
3rd st NE.	Lowry av.	20th av.	East.	6	139	4	143
13th av NE.	Water st.	Sibley st.	Both.	6	.....	87	87
22nd av NE.	California st.	2nd st.	South.	6	.....	130	130
24th av NE.	2nd st.	University av.	Both.	6	158	3	161
27th av NE.	Marshall st.	Grand st.	South.	6	.....	240	251
University av NE.	3rd av.	12th av.	Both.	6	100	.....	100
Total.					1,675	2,239	3,914
Cost {	Walk.				\$804.00	\$1,074.72	\$1,878.72
	Inspection.				32.13	42.94	75.07
Total.					\$836.13	\$1,117.66	\$1,953.79

Drains on 42nd st E.	Minnehaha av.	38th av S.	12	Pipe	Circular	210.0	1	3	751.0
Intersection on Quincy	at at Broadway st.	.....	15	Pipe	Circular	56.6	.....	.....	206.15
E Hennepin av.	8th st SE.	toward 7th st.	12	Pipe	Circular	322.5	3	.....	997.59
E Hennepin av.	(New Central)	.....	.....	.....	.....	.....	.....	.....	.....
E Hennepin av.	Crossing at Tyler st.	.....	12	Pipe	Circular	51.0	.....	.....	231.35
E Hennepin av.	(Division st)	.....	.....	.....	.....	.....	.....	.....	.....
E Hennepin av.	Crossing at Polk st.	.....	12	Pipe	Circular	47.5	.....	.....	117.68
E Hennepin av.	Crossing at 5th av SE.	.....	18	Pipe	Circular	49.0	.....	1	243.28
E Hennepin av.	Taylor st.	.....	12	Pipe	Circular	180.5	1	.....	635.07
E Hennepin av.	Pierce st.	blk easterly	12	Pipe	Circular	174.5	1	.....	492.44
E Hennepin av.	Johnson st.	blk easterly	12	Pipe	Circular	177.1	1	.....	499.85
E Hennepin av.	11th av SE.	blk easterly	12	Pipe	Circular	172.0	1	.....	366.69
E Hennepin av.	12th av SE.	blk easterly	12	Pipe	Circular	168.9	1	.....	378.14
E Hennepin av.	Crossing at	13th av SE.	15	Pipe	Circular	56.0	.....	.....	186.35
E Hennepin av.	14th av SE.	blk easterly	12	Pipe	Circular	166.5	1	.....	519.95
E Hennepin av.	15th av SE.	blk easterly	12	Pipe	Circular	168.0	1	.....	394.88
E Hennepin av.	Crossing northerly at	16th av SE.	12	Pipe	Circular	57.0	1	.....	656.24
E Hennepin av.	16th av SE.	blk easterly	12	Pipe	Circular	167.0	.....	.....	.....
						101,305.0	735	297	\$460,597.14

\*5,719.51

TABLE No. 38—Continued  
SIDEWALK LAID DURING THE SEASON OF 1915

STREET	FROM	TO	SIDE	Width in Feet	LENGTH		
					Artificial Stone Laid by Owner Lineal Feet	Artificial Stone Laid by City Lineal Feet	Total Feet
3rd Ward							
Crystal Lake av.	Irving av.	26th av N.	Both	6	55	38	93
DuPont av N.	6th av	12th av	East	6	56	56	112
Emerson av N.	17th av	20th av	East	6	12	12	24
8th av N.	Bradford st.	Russell av	North	6	36	3	39
18 av N.	2nd st.	Girard av	South	6	124	59	183
Fremont av N.	17th av	18th av	Both	6	84	84	168
4th st N.	Plymouth av.	23rd av	Both	6	66	97	163
5th st N.	6th av	14th av	Both	6	196	92	288
14th av N.	Russell av	Upton av	North	6	307	160	467
15th av N.	Newton av.	Penn av	South	6	252	5	257
Girard av N.	Plymouth av.	22nd av	Both	6	26	26	52
Hogg av N.	7th av	8th av	North	6	7	7	14
Irving av N.	Elwood av.	25th av	East	6	20	15	35
James av N.	11th av	12th av	East	6	17	17	34
Knox av N.	10th av	14th av	East	6	24	8	32
Lyndale Place	6th av	14th av	West	6	25	35	60
Lyndale av N.	8th av	26th av	Both	0	139	139	278
McVair av N.	Sheridan av.	Upton av	Both	0	160	2	162
Newton av N.	16th av	26th av	Both	0	1,090	166	1,256
19th av N.	Morgan av.	City Limits	Both	0	454	142	596
Queen av N.	Crystal Lake av.	26th av	Both	0	400	400	800
Russell av N.	10th av	21st av	Both	0	1,788	695	2,483
Sheridan av N.	14th av	21st av	Both	0	681	1,366	2,047
2nd st N.	10th av	26th av	Both	0	250	58	308
6th st N.	DuPont av.	Jewett Place	West	0	60	60	120
16th av N.	25th av	26th av	Both	0	582	8	590
17th av N.	Morgna av.	Sheridan av.	Both	0	42	316	358
2nd st.	3rd st.	Upton av.	Both	0	1,998	482	2,480
Thomas av N.	6th av	24th av	Both	0	166	2,170	2,336
8th av	16th av	16th av	Both	0	30	62	92
12th av N.	Aldrich av.	Bryant av.	North	0	20	20	40

TABLE No. 29  
SEWER CONNECTIONS AND MILEAGE OF SEWERS BY WARDS

First . . . . .	1,110	95	1,205	14.559	1.087	15.646	2.619	77.0
Second . . . . .	2,292	138	2,430	29.489	1.238	30.727	0.561	79.0
Third . . . . .	4,783	340	5,123	50.510	0.822	51.332	0.142	99.8
Fourth . . . . .	3,424	128	3,552	38.308	1.319	39.627	0.539	89.6
Fifth . . . . .	2,756	66	2,822	23.489	0.100	23.589	1.232	119.6
Sixth . . . . .	973	38	1,011	10.320	0.060	10.380	0.398	97.4
Seventh . . . . .	3,133	324	3,457	30.148	0.858	31.006	.....	111.5
Eighth . . . . .	6,207	243	6,450	51.554	0.670	52.224	.....	123.5
Ninth . . . . .	2,626	287	2,913	32.011	3.200	35.211	0.352	82.7
Tenth . . . . .	2,002	353	2,355	29.839	1.679	31.518	.....	74.7
Eleventh . . . . .	2,179	116	2,295	18.352	0.113	18.465	0.042	124.3
Twelfth . . . . .	1,519	432	1,951	25.947	3.378	29.325	0.205	82.7
Thirteenth . . . . .	1,008	546	1,554	15.393	4.662	20.055	.....	77.7
Totals . . . . .	34,012	3,106	37,118	369.919	19.186	389.105	6.090	95.4



TABLE No. 38—Continued  
SIDEWALK LAID DURING THE SEASON OF 1915

STREET	FROM	TO	SIDE	Width in Feet	LENGTH		
					Artificial Stone Laid by Owner Lineal Feet	Artificial Stone Laid by City Lineal Feet	Total Feet
Nicollet av.	1st av.	Washington av.	Both.	6-15	223	69	292
9th st.	Mary Place.	Holden st.	South.	6	13	177	190
Ontario st.	Cedar Lake av.	6th av N.	South.	6	304	153	457
Penn av.	Lyndale av.	Aldrich av.	North.	6	135	2	137
Queen av.	Hawthorne av.	Bridge.	East.	6	180	180	360
Russell av.	Laurel av.	6th av N.	West.	6	481	131	612
Sheridan av.	Chestnut av.	Chestnut av.	Both.	6	439	191	630
Spruce Place.	Yale Place.	Hawthorn av.	East.	6	330	218	538
Summit av.	Hennepin av.	Oak Grove st.	Both.	6	256	218	538
2nd av N.	Hennepin av.	Irving av.	South.	6	221	98	319
2nd st.	Hennepin av.	Penn av.	Both.	6	281	18	299
6th av N.	Hennepin av.	Marquette av.	Both.	6-8	183	503	686
7th st N.	Hoag av.	Irving av.	South.	6	45	10	55
16th st N.	Nicollet av.	Hennepin av.	North.	6	264	10	274
17th st N.	Hennepin av.	Chestnut av.	West.	6	475	20	495
3rd st S.	Laurel av.	Superior av.	East.	6	62	26	88
10th st.	Hennepin av.	Marquette av.	Both.	6	26	233	259
12th st.	Mary Place.	Nicollet av.	South.	6	480	77	557
Vine Place.	Hennepin av.	Yale Place.	Both.	15	43	1,088	1,131
Washington av.	Grant st.	Yale Place.	West.	6	90	90	180
Western av.	Marquette av.	3rd st.	Both.	6	6,832	4,562	11,394
Yale Place.	Freemont av.	Washington av.	Both.	6	3,279.36	\$2,189.76	\$5,469.12
	Spruce Place.	Vine Place.	North.	6	131.04	87.50	218.54
Total.					\$3,410.40	\$2,277.26	\$5,687.66
Cost { Walk.							
Cost { Inspection.							
Total.							

<b>5th Ward</b>									
Elliot av.	19th st.	Franklin av.	West.	18	14	18	6	18	18
8th av S.	9th st.	10th st.	East.	21	17	21	6	21	35
8th st S.	2nd av.	3rd av.	South.				6		17
18th st S.	Portland av.	Chicago av.	Both.	90	27	90	6	90	90
1st av S.	Grant st.	24th st.	Both.	25		25	6	25	52
4th av S.	Washington av.	14th st.	Both.	546	60	546	6-15	546	606
4th st S.	Marquette av.	7th av.	North.	168	18	168	6-14	168	186
5th av S.	Washington av.	16th st.	East.	129	37	129	6-8	129	166
Grant st.	4th av.	5th av S.	South.		16		6		16
Marquette av.	2nd st.	13th st.	East.	427	119	427	6-15		546
18th st.	1st av S.	Stevens av.	North.	59		59	6	59	59
Stevens av.	19th st.	24th st.	Both.	21	26	21	6	21	47
2nd av S.	2nd st.	Franklin av.	Both.	77	50	77	15	77	127
6th st S.	6th av.	9th av.	Both.	201		201	8	201	201
7th st S.	5th av.	6th av.	North.	192		192	8	192	192
17th st S.	Washington av.	Portland av.	Both.		36		6		36
3rd av S.	Washington av.	24th st.	Both.	22	97	22	6-8		119
3rd st S.	3rd av.	4th av.	Both.		63		6		63
10th av S.	Washington av.	3rd st.	West.		26		6		26
12th st S.	Marquette av.	2nd av.	South.	248		248	20		248
Total.				2,244	606				2,850
Cost	Walk.			\$1,077.12	\$290.88				\$1,368.00
Inspection				43.04	11.62				54.66
Total.				\$1,120.16	\$302.50				\$1,422.66
<b>6th Ward</b>									
Franklin Terrace.	30th av.	31st av S.	South.		39		6		39
14th av S.	3rd st.	4th st.	West.	32		32	6		32
3rd st S.	15th av.	Cedar av.	Both.	46	12	46	6		58
12th av S.	Washington av.	3rd st.	East.		53		8		53
Total.				78	104				182
Cost	Walk.			\$37.44	\$49.92				\$87.36
Inspection				1.50	1.99				3.49
Total.				\$38.94	\$51.91				\$90.85

TABLE No. 38—Continued  
SIDEWALK LAID DURING THE SEASON OF 1915

STREET	FROM	TO	SIDE	Width in Feet	LENGTH		
					Artificial Stone Laid by Owner Lineal Feet	Artificial Stone Laid by City Lineal Feet	Total Feet
7th Ward							
Bloomington av.	27th st.	40th st.	Both.	6	249	34	283
Cedar av.	27th st.	42nd st.	Both.	6	757	236	993
Chicago av.	24th st.	43rd st.	East.	6	92	16	108
Ellicott av.	27th st.	43rd st.	Both.	6	765	3,121	3,886
11th av S.	24th st.	27th st.	Both.	6	180	15	195
18th av S.	24th st.	40th st.	Both.	6	670	418	1,088
14th av S.	24th st.	39th st.	Both.	6	875	909	1,784
15th av S.	33rd st.	35th st.	Both.	6	40		40
40th st E.	10th av.	11th av S.	Both.	6	252	141	393
Cedar av.	21st av S.	21st av S.	Both.	6		2,638	2,638
42nd st E.	13th av.	14th av S.	South.	8	12		12
Lake st.	31st st.	West.	West.	6	100		100
Longfellow av.	37th st.	38th st.	Both.	6	440	766	1,206
19th av S.	25th st.	30th st.	Both.	6	2,374	1,166	3,540
17th av S.	37th st.	40th st.	Both.	6	2,038	592	2,630
16th av S.	24th st.	2nd st.	Both.	6	304	589	893
13th av S.	24th st.	Powderhorn Terrace	Both.	6	268	333	601
12th av S.	29th st.	40th st.	Both.	6	985	572	1,557
25th av S.	31st st.	38th st.	Both.	6	907	1,527	2,434
26th st E.	14th av.	16th av.	Both.	6		50	50
27th st E.	Cedar av.	Longfellow av.	Both.	6	125	8	133
31st st E.	Chicago av.	21st av.	Both.	6	254	472	726
32nd st E.	Chicago av.	21st av.	Both.	6		32	32
33rd st E.	14th av.	20th av.	Both.	6	126	44	170
34th st E.	Chicago av.	Ellicott av.	Both.	6		26	26
35th st E.	11th av.	21st av.	Both.	6	121	192	313
36th st E.	15th av.	20th av.	Both.	6		29	29
37th st E.	Chicago av.	21st av.	Both.	6	244	80	324
38th st E.	Longfellow av.	21st av.	Both.	6	88	344	432
39th st E.	12th av.	14th av.	Both.	6	370	22	392
Total.					12,768	14,424	27,192
Cost { Walk... Cost Inspection.					\$6,128.64	\$6,923.52	\$13,052.16
					244.89	276.65	521.54
Total.					\$6,373.53	\$7,200.17	\$13,573.70

## CITY OF MINNEAPOLIS

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TABLE No. 38—Continued  
SIDEWALK LAID DURING THE SEASON OF 1915

STREET	FROM	TO	SIDE	Width in Feet	LENGTH		
					Artificial Stone Laid by Owner Lineal Feet	Artificial Stone Laid by City Lineal Feet	Total Feet
9th Ward							
Adams st.	Broadway st.	17th av NE.	Both.	6	14	7	21
Broadway st.	Washington st.	Monroe st NE.	Both.	6	12	10	22
Buchanan st.	19th	31st av NE.	Both.	6	1,724	1,724	1,724
Central av.	10th	37th av NE.	Both.	6	16	105	121
18th av NE.	Quincy st.	Jackson st.	Both.	6	15	15	15
Fillmore st.	Winter st.	29th av NE.	Both.	6	92	537	629
5th st NE.	Central av.	13th av	East.	6	168	168	168
15th av NE.	Madison st.	Monroe st.	North.	6	16	16	16
Garfield av.	22nd av.	Lowry av NE.	Both.	6	549	9	558
Jefferson st.	Broadway st.	19th av NE.	Both.	6	28	56	84
Johnson st.	Spring st.	23rd av NE.	Both.	6	24	650	674
Lincoln st.	5th st.	Garfield st.	North.	6	220	388	608
Monroe st.	Spring st.	26th av NE.	Both.	6	299	46	345
18th	Washington st.	18½ av NE.	East.	6	28	28	28
19th av NE.	17th av.	Johnson st.	Both.	6	336	583	919
Polk st.	18th av.	32nd av NE.	Both.	6	314	142	456
Pierce st.	18th av.	28th av NE.	Both.	6	27	27	27
Spring st.	Washington st.	Fillmore st NE.	Both.	6	25	25	25
6th st NE.	Central av.	1st av NE.	Both.	6	90	90	90
7th st NE.	Lowry av.	27th av NE.	Both.	6	1,455	129	1,584
13th av NE.	30th av.	Jefferson st.	West.	6	34	34	34
22nd av NE.	5th st.	Jefferson st.	Both.	6	26	26	26
23rd av NE.	Jefferson st.	Garfield st.	Both.	6	199	199	199
24th av NE.	Buchanan st.	Madison st.	South.	6	28	15	43
26th av NE.	Jefferson st.	7th st.	North.	6	248	43	291
28th av NE.	Fillmore st.	Buchanan st.	Both.	6	501	420	911
29th av NE.	Johnson st.	Garfield st.	Both.	6	62	62	62
Ulysses st.	28th av.	29th av NE.	Both.	6	126	1,097	1,223
Washington st.	15th av.	27th av NE.	Both.	6	80	3	83
Total.					5,032	6,722	11,754
Cost { Walkp. Cost Inspection.					\$2,415.36	\$3,226.56	\$5,641.92
	Total.				96.51	128.93	225.44
					\$2,511.87	\$3,355.49	\$5,867.36

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TABLE No. 38—Continued  
SIDEWALK LAID DURING THE SEASON OF 1915

STREET	FROM	TO	SIDE	Width in Feet	LENGTH		
					Artificial Stone Laid by Owner Lineal Feet	Artificial Stone Laid by City Lineal Feet	Total Feet
11th Ward							
8th st S.	13th av.	14th av.	South.	8	163	..	163
Franklin av.	Cedar av.	Seabury av.	South.	6	20	61	81
14th av S.	19th st.	Franklin av.	West.	8	80	..	80
Minneapolis av.	32nd av.	33rd av.	North.	6	80	66	146
9th st S.	24th av.	Riverside av.	North.	6	..	64	64
Seabury av.	22nd st.	33rd av S.	South.	6	..	50	50
12th av S.	8th st.	9th st.	South.	6	..	16	16
13th av S.	8th st.	23th st.	East.	8	135	8	143
21st st.	13th av.	14th av.	Both.	6	..	49	49
22nd st.	11th av.	Minneapolis av.	Both.	6	..	99	99
24th av S.	8th st.	8 1/2 st.	West.	6	..	9	9
24th st.	32nd av.	32nd st.	North.	6	..	95	95
27th av S.	32nd st.	Franklin av.	East.	6	..	13	13
28th av S.	Riverside av.	22nd st.	Both.	6	..	16	16
30th av S.	Franklin Terrace.	Franklin av.	Both.	6	..	81	81
Total.	..	..	..	..	478	627	1,105
Cost	Walk. Inspection.	..	..	..	\$229.44	\$300.96	\$530.40
					9.17	12.02	21.19
Total.	..	..	..	..	\$238.61	\$312.98	\$551.59

12th Ward		East	West
40th av S	49th st	6	6
41st av S	41st st	6	6
42nd av S	28th st	6	6
43rd av S	21st av	6	6
44th av S	51st st	6	6
45th st	Lake st	6	6
46th st	29th av	6	6
47th st	28th av	6	6
48th st	21st av	6	6
49th st	32nd st	6	6
50th st	33rd st	6	6
Lake st S	34th st	6	6
Minnehaha av	35th st	6	6
23rd av S	36th st	6	6
24th av S	37th st	6	6
25th st	38th st	6	6
26th st	39th st	6	6
27th av S	Snelling av	6	6
28th av S	23rd av	6	6
29th av S	35th av S	6	6
30th av S	42nd st	6	6
31st av S	48th st	6	6
32nd st	50th st	6	6
33rd st	41st st	6	6
34th st	42nd st	6	6
35th st	43rd st	6	6
36th st	44th st	6	6
37th st	45th st	6	6
38th st	46th st	6	6
39th st	47th st	6	6
40th st	48th st	6	6
41st st	49th st	6	6
42nd st	50th st	6	6
43rd st	51st st	6	6
44th st	52nd st	6	6
45th st	53rd st	6	6
46th st	54th st	6	6
47th st	55th st	6	6
48th st	56th st	6	6
49th st	57th st	6	6
50th st	58th st	6	6
51st st	59th st	6	6
52nd st	60th st	6	6
53rd st	61st st	6	6
54th st	62nd st	6	6
55th st	63rd st	6	6
56th st	64th st	6	6
57th st	65th st	6	6
58th st	66th st	6	6
59th st	67th st	6	6
60th st	68th st	6	6
61st st	69th st	6	6
62nd st	70th st	6	6
63rd st	71st st	6	6
64th st	72nd st	6	6
65th st	73rd st	6	6
66th st	74th st	6	6
67th st	75th st	6	6
68th st	76th st	6	6
69th st	77th st	6	6
70th st	78th st	6	6
71st st	79th st	6	6
72nd st	80th st	6	6
73rd st	81st st	6	6
74th st	82nd st	6	6
75th st	83rd st	6	6
76th st	84th st	6	6
77th st	85th st	6	6
78th st	86th st	6	6
79th st	87th st	6	6
80th st	88th st	6	6
81st st	89th st	6	6
82nd st	90th st	6	6
83rd st	91st st	6	6
84th st	92nd st	6	6
85th st	93rd st	6	6
86th st	94th st	6	6
87th st	95th st	6	6
88th st	96th st	6	6
89th st	97th st	6	6
90th st	98th st	6	6
91st st	99th st	6	6
92nd st	100th st	6	6
93rd st	101st st	6	6
94th st	102nd st	6	6
95th st	103rd st	6	6
96th st	104th st	6	6
97th st	105th st	6	6
98th st	106th st	6	6
99th st	107th st	6	6
100th st	108th st	6	6
101st st	109th st	6	6
102nd st	110th st	6	6
103rd st	111th st	6	6
104th st	112th st	6	6
105th st	113th st	6	6
106th st	114th st	6	6
107th st	115th st	6	6



TABLE No. 38.—Continued  
SIDEWALK LAID DURING THE SEASON OF 1915

STREET	FROM	TO	SIDE	Width in Feet	LENGTH		
					Artificial Stone Laid by Owner Lineal Feet	Artificial Stone Laid by City Lineal Feet	Total Feet
13th Ward							
Abbott av N.	40th st.	49th st.	Both	6	42	25	67
Aldrich av N.	37th st.	50th st.	Both	6	1,434	861	2,295
Beard av	37th st.	49th st.	East	6	1,432	21	1,453
Blaisdell av N.	36th st.	30th st.	Both	6	202	50	252
Bryant av A.	40th st.	Minnehaha boulevard.	Both	6	3,173	2,084	5,257
Burch Terrace.	40th st.	Harriet av.	Both	6	821	14	835
Chicago av	40th st.	30th st.	West	6	623	14	637
Columbia av	34th st.	Minnehaha boulevard.	Both	6	2,758	2,573	5,331
Collins av N.	34th st.	50th st.	Both	6	2,558	3,119	5,677
Columbus av	40th st.	50th st.	Both	6	4,990	822	5,812
Drew av	40th st.	Minnehaha boulevard.	Both	6	183	168	351
Dupont av	30th st.	Minnehaha boulevard.	East	6	65	183	248
Edmond Place	30th st.	40th st.	Both	6	612	6	618
Everett av	48th st.	45th st.	West	6	248	248	496
Front av	42nd st.	45th st.	Both	6	1,146	257	1,403
1st av N.	40th st.	Garfield av	Both	6	272	527	799
2d av N.	40th st.	Garfield av	Both	6	386	1,848	2,234
40th st.	Park av	Calfax av	Both	6	727	1,211	1,938
Chicago av	Chicago av	Dupont av	Both	6	307	307	614
41st st.	1st av N.	Minnehaha boulevard.	North	6	180	11	191
42nd st.	Garfield av	Chicago av	Both	6	583	398	981
43rd st.	Garfield av	Chicago av	Both	6	583	573	1,156
44th st.	Bryant av	Zenith av	Both	6	270	843	1,113
45th st.	Lyndale av	Abbott av	Both	6	151	698	849
46th st.	Chicago av	Abbott av	Both	6	1,057	1,284	2,341
47th st.	Nicollet av	Grand av	Both	6	823	2,024	2,847
48th st.	Chicago av	Grand av	Both	6	687	3	690
49th st.	Harriet av	Front av	Both	6	2,511	4,004	6,515
50th st.	Harriet av	Drew av	Both	6	715	288	1,003
51st st.	2nd av N.	Lyndale av	Both	6	344	1,590	1,934
52nd st.	Nicollet av	Minnehaha boulevard.	Both	4	2461	1,380	3,841
Garfield av	40th st.	Minnehaha boulevard.	Both	6	2461	1,380	3,841

Girard av.	48th st.	50th st.	Both.	6	1,387	80	2,231	3,618
Grand av.	41st st.	48th st.	Both.	6	1,565	1,326	2,911	2,911
Harriet av.	40th st.	50th st.	Both.	6	126	8	1,326	1,326
Holmes av.	35th st.	36th st.	East.	6	1,109	1,004	2,113	2,113
Lyndale av.	41st st.	Minnehaha blvd.	Both.	6	537	3,484	4,021	4,021
Nicollet av.	37th st.	Minnehaha blvd.	Both.	6	280	17	17	17
Oakland av.	38th st.	39th st.	Both.	6	228	228	508	508
Park av.	38th st.	42nd st.	Both.	6	13	194	207	207
Fillsbury av.	34th st.	38th st.	Both.	6	747	609	1,356	1,356
Pleasant av.	34th st.	50th st.	Both.	6	43	221	264	264
Portland av.	40th st.	41st st.	Both.	6	288	554	842	842
Queen av.	42nd st.	50th st.	Both.	6	590	66	590	590
Richfield av.	Lake Calhoun.	39th st.	West.	6	42	42	84	84
Thomas av.	39th st.	45th st.	Both.	6	214	11	225	225
3rd av S.	Park av.	42nd st.	Both.	6	131	258	387	387
34th st.	3rd av S.	Dupont av.	Both.	6	130	2	132	132
36th st.	3rd av S.	Portland av.	South.	6	527	640	1,167	1,167
37th st.	Aldrich av.	Bryant av.	South.	6	311	1,133	1,444	1,444
39th st.	Harriet av.	3rd av S.	Both.	6	491	1,741	2,232	2,232
Upton av.	40th st.	50th st.	Both.	6	229	144	373	373
Vincent av.	45th st.	50th st.	Both.	6	578	1,789	2,367	2,367
Washington av.	44th st.	51st st.	Both.	6	61	78	61	61
Wentworth av.	43rd st.	48th st.	Both.	6	340	338	678	678
Xerxes av.	45th st.	48th st.	Both.	6				
York av.	45th st.	47th st.	Both.	6				
Zenith av.	45th st.	47th st.	Both.	6				
Total					39,422	44,372	83,794	
Walk.					\$18,922.56	\$21,298.56	\$40,221.12	
Cost Inspection.					756.36	851.21	1,607.57	
Total.					\$19,678.92	\$22,149.77	\$41,828.69	

TABLE No. 39  
SUMMARY OF TABLE No. 38

WARDS	ARTIFICIAL STONE						TOTAL			
	Laid by Owner			Laid by City			Lineal Feet	Cost		
	Lineal Feet	Cost		Lineal Feet	Cost			Walk	Inspection	
		Walk	Inspection		Walk	Inspection				
First.....	1,075	\$804.00	\$32.13	2,239	\$1,074.72	\$42.94	3,914	\$1,878.72	\$75.07	\$1,953.79
Second.....	8,461	3,917.28	156.53	5,750	2,760.00	110.28	13,911	6,677.28	266.81	6,944.09
Third.....	9,956	4,778.88	190.95	7,332	3,519.36	140.63	17,288	8,298.24	331.58	8,629.82
Fourth.....	6,832	3,279.36	131.04	4,562	2,189.76	87.50	11,394	5,469.12	218.54	5,687.66
Fifth.....	2,244	1,077.12	43.04	606	290.88	11.62	2,850	1,368.00	54.66	1,422.66
Sixth.....	78	37.44	1.50	104	49.92	1.99	182	87.36	3.49	90.85
Seventh.....	12,768	6,128.64	244.89	14,424	6,923.52	276.65	27,192	13,052.16	521.54	13,573.70
Eighth.....	9,810	4,708.80	188.16	3,983	1,911.84	76.39	13,793	6,620.64	264.55	6,885.19
Ninth.....	5,032	2,415.36	96.51	6,722	3,226.56	128.93	11,754	5,641.92	225.44	5,867.36
Tenth.....	19,571	9,394.08	375.37	12,852	6,168.96	246.50	32,423	15,563.04	621.87	16,184.91
Eleventh.....	478	229.44	9.17	627	300.96	12.02	1,105	530.40	21.19	551.59
Twelfth.....	15,398	7,391.04	295.46	43,483	20,871.84	834.12	58,881	28,262.88	1,129.58	29,392.46
Thirteenth.....	39,422	18,922.56	756.26	44,372	21,298.56	851.21	83,794	40,221.12	1,607.47	41,828.59
Total.....	131,425	\$63,084.00	\$2,521.01	147,056	\$70,586.68	\$2,820.78	278,481	\$133,670.88	\$5,341.79	\$139,012.67
Miles.....	24.89		27.85				52.74			

RATE OF ASSESSMENT PER LINEAL FOOT

Width in Feet	KIND	Rate
2	Artificial Stone.....	\$ .16
4	Artificial Stone.....	.32
6	Artificial Stone.....	.48
8	Artificial Stone.....	.64
15	Artificial Stone.....	1.20

TABLE No. 42  
BRIDGES OVER RIVERS AND CREEKS

NAME	OVER	KIND	No. spans	Total length Feet	Width Road-way	Side-walk	Total length
Franklin av.	Mississippi river	Iron Pratt truss.	0	1,000	16 6	0	0 148, 480
Forty-second av N.	Mississippi river	Steel bow truss.	0	1,375	30	0	100, 300
Hennepin steel arch.	West channel Mississippi river.	Concrete approach.	0				
Hennepin Island.	Mississippi river	2 and 3 hinged arch.	0	044	00	18	980, 870
Lake st.	Mississippi river	Steel bent.	11	300	30	0	97 4, 100
Plymouth av.	Mississippi river	Iron braced arch.	0	1,970	38	0	162, 417
Stone arch.	Mississippi river	Steel bow truss.	0	1,061	30	0	
Tenth av S.	East channel Mississippi river	Iron Pratt truss.	0		18	0	
Twentieth av N.	Mississippi river	1 stone arch and 1 steel girder.	0	304	00	18	701, 487
Thirty-second av N.	Mississippi river	Iron Pratt truss and wooden trestle.	0	1,143	17	0	100, 100
Washington av S.	Mississippi river	Iron bow truss.	0	300	30	0	100, 100
Gerber baths.	Mississippi river	Iron bow truss.	0	300	30	0	100, 100
First st and Sixth av S.	Mississippi river	Iron Pratt truss.	0	1,064	38	0	212, 000
Aldrich av N.	Minneapolis Mill Co.'s canal.	Concrete pier, wooden joists.	0	100	14	0	2,000
Bryant av N.	Bassett's creek.	Iron plate girder.	14	205	20	0	10, 000
Cedar Lake road.	Bassett's creek.	Concrete arch.	1	234	22	0	3, 000
Dupont av N.	Bassett's creek.	Stone arch.	1	201	42	12	4, 000
Dupont av N. (Elec. Short Line)	Bassett's creek.	Stone arch and wooden trestle.	1	201	40	11	6, 244
Eighth av N.	Bassett's creek.	Stone abutments, concrete floor.	1	400	40	11	100, 000
Fourth st N.	Bassett's creek.	Concrete arch.	1	700	22	0	2, 125
Fifth st N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Lyndale av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Penn av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Second st N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Sixth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Seventh av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Eighth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Ninth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Tenth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Eleventh av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Twelfth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Thirteenth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Fourteenth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Fifteenth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Sixteenth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Seventeenth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Eighteenth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Nineteenth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Twentieth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Twenty-first av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Twenty-second av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Twenty-third av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Twenty-fourth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Twenty-fifth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Twenty-sixth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Twenty-seventh av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Twenty-eighth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Twenty-ninth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Thirtieth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Thirty-first av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Thirty-second av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Thirty-third av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Thirty-fourth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Thirty-fifth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Thirty-sixth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Thirty-seventh av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Thirty-eighth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Thirty-ninth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Fortieth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Forty-first av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Forty-second av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Forty-third av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Forty-fourth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Forty-fifth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Forty-sixth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Forty-seventh av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Forty-eighth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Forty-ninth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125
Fiftieth av N.	Bassett's creek.	Concrete arch.	1	200	20	0	2, 125

TABLE No. 42—Continued  
BRIDGES OVER RIVERS AND CREEKS

NAME	OVER	KIND	No. Spans	Total Length Feet	Width		Total Cost
					Road-way	Side-walk	
Washington av N	Bassett's creek	Stone arch	1	30	64	18	\$5,084.84
Cedar av	Minnelaha creek	Concrete arch	2	41	32	6	2,865.00
Chicago av	Minnelaha creek	Concrete arch	2	41	20	6	5,127.33
Hiawatha av	Minnelaha creek	Concrete arch	1	65	30	6	5,000.00
Laverne av	Minnelaha creek	Concrete arch	1	32	24	8	5,000.00
Lyndale av	Minnelaha creek	Stone arch and concrete	1	32	48	8	20,000.00
Minnelaha park	Minnelaha creek	Steel arch and steel beams	9	620	18	6	40,000.00
Minnelaha av	Minnelaha creek	Steel arch	1	35	48	6	5,982.87
Nicollet av	Minnelaha creek	Steel trestle	27	831 1/2	19	6	18,040.00
Portland av	Minnelaha creek	Concrete arch	2	41	30	6	3,635.26
Penn av	Minnelaha creek	Concrete arch	1	30	34	6	5,352.32
Thirty-fourth av S	Minnelaha creek	Concrete arch	1	30	30	6	6,324.64
Xorxes av	Minnelaha creek	Concrete arch	1	60	36	6	4,637.00
Twenty-eighth av S	Minnelaha creek	Wooden stringers	1	30	20	6	400.00
Fiftieth at near Irving av	Outlet to Lake Harriet	Corrugated iron culvert	2	31	20	6	200.00
Dupont av N	Shingle creek	Concrete abutments, wooden str's	1	26	20	6	1,000.00
Forty-fourth av N	Shingle creek	Concrete arch	1	26	34	6	2,872.10
Humboldt av N	Shingle creek	Concrete arch	1	30	32	6	4,250.00
Lyndale av N	Shingle creek	Steel "I" beams and concrete	1	26 1/2	32	6	4,000.00
Osseo road	Shingle creek	Stone abutments, wooden stringers	1	18	27	6	1,027.48
Superior av	Horseshoe Lake	Pile bridge	1	209	24	6	881.16
Eighth av S	University creek	Stone arch	1	40	40	6	1,000.00
Fifth at SE	University creek	Stone arch	2	40	40	6	1,000.00
Fourth at SE	University creek	Stone arch	1	40	40	6	2,309.07
Seventh av SE	University creek	Stone arch	1	40	40	6	2,700.05
University av SE	University creek	Stone arch	1	40	40	6	3,075.45
University av SE	Tuttle creek	Brick arch culvert	1	5' 8 1/2	40	6	1,000.00
University av SE and 25th av SE	Bridal Veil creek	Brick arch culvert	1	13	42	12	461.72
Marshall at near 20th av NE	Graham creek	Stone arch	1	8	50	6	651.54
Excelsior road	Webber creek	Corrugated culvert	1	8	50	6	135.00
Lake at bridge, No. 1	Canal between Lake Calhoun and Lake of the Isles	Concrete arch	1	50	88	13	55,978.94
Bridge No. 2	K. R. carrying C. M. & St. P.	Concrete beams and slabs	4	26	2	Trucks	384.00
Bridge No. 3	Lake of the Isles, south side	Concrete arch	1	50	32	6	28,145.57
Bridge No. 4	Lake of the Isles, west side	Concrete arch	1	50	32	6	26,513.31
Bryant av	Shingle creek	Concrete arch	1	20	18	1 side, 6	1,018.00
Collins av	Shingle creek	Concrete arch	1	20	18	1 side, 6	1,556.27

TABLE No. 43  
BRIDGES OVER RAILWAYS AND STREETS

NAME	OVER	KIND	No. Spans	Total Length Feet	Width		Total Cost
					Road-way	Side-walk	
Aldrich av.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	120	20	8	\$15,000.00
Border av.	Elec. Short Line.	Steel girder.	4	109	40	12	7,590.00
Broadway and Central.	Great Northern Ry.	Steel plate girder.	3	534	40	6 and 12	126,103.06
Bladell av.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	120	30	8	15,000.00
Bryant av.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	120	30	8	15,000.00
Central and Broadway.	Great Northern Ry.	Steel plate girder.	2	80	40	6	55,186.86
Central and Ninth st.	Great Northern Ry.	Steel plate girder.	2	200	56	12	15,000.00
Chicago av.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	129	52	8	20,000.00
Clinton av.	C. M. & St. P. H. & D. Div.	Concrete slab.	6	228	30	8	15,000.00
Columbus av.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	114	30	8	15,000.00
Colfax av.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	120	30	8	50,000.00
Como and Tenth av SE viaduct.	Como and Tenth av	Iron plate girder.	4	113 1/2	100	8	15,000.00
Como and 23rd av SE viaduct.	Como av SE.	Iron plate girder.	3	82	26 1/2	8	4,000.00
Church st.	St. P. & N. P. Rys.	Iron lattice girder.	1	78	42	10	4,000.00
Cedar Lake road.	G. N. Ry., Osseo Branch.	Iron bowstring truss.	1	35	34	6	12,015.00
Cedar Lake road.	Elec. Short Line.	Concrete slab.	3	94 1/2	9	8	5,200.00
Dean blvd viaduct.	Boulevard.	Iron girder.	3	120	30	8	15,000.00
Dupont av.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	108 1/2	30	8	15,000.00
Elliot av.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	109	32	8	15,000.00
Emerson av.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	120	30	8	15,000.00
First av S.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	115-4 1/2	36	8	18,000.00
First st N.	M. & St. L. and G. N. Rys.	Iron Pratt truss.	1	110	36	6	10,000.00
Fourth av S.	C. M. & St. P. H. & D. Div.	Concrete slab.	10	308	36	8	30,000.00
Fourth st N.	M. & St. L. and G. N. Rys.	Iron Pratt truss and plate girder.	17	518 1/2	36	6	48,000.00
Fifth st N.	M. & St. L. and G. N. Rys.	Iron Pratt truss and plate girder.	14	482	36	6	43,500.00
Fourth st N.	M. St. P. and N. P. Rys.	Iron lattice girder.	1	48	28	8	5,350.00
5th st NE viaduct under Soo R. R.	M. E. and M. & St. L. Rys.	Iron Warren truss.	6	109	28	8	7,350.00
First st S near Third av.	Great Northern Ry.	Steel plate girder.	1	82	26	12	13,000.00
Fourth st E.	Great Northern Ry.	Steel plate girder.	1	216	36	12	28,528.07
Fifth st E.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	156	32	8	15,000.00
14th av S.	Fifteenth av SE.	Iron plate girder.	1	59	100	8	22,886.03

TABLE No. 43—Continued  
BRIDGES OVER RAILWAYS AND STREETS

NAME	OVER	KIND	No. Spans	Total Length Feet	Width		Total Cost
					Road-way	Side-walk	
Fifteenth av SE.....	Great Northern Ry.....	Iron girder, steel girder.....	3	100	50	15	80,822.00
Fourth st SE and Fifteenth av.....	Great Northern Ry.....	Iron girder, steel girder.....	4	180	50	15	15,000.00
Fremont av.....	C. M. & St. P. H. & D. Div.....	Concrete slab.....	3	120	30	8	15,000.00
Garfield av.....	C. M. & St. P. H. & D. Div.....	Concrete slab.....	3	130	30	8	15,000.00
Grand av.....	C. M. & St. P. H. & D. Div.....	Concrete slab.....	3	100	30	8	15,000.00
Harriet av.....	C. M. & St. P. H. & D. Div.....	Concrete slab.....	3	100	30	8	15,000.00
Hennepin av.....	M. & St. L. Ry.....	Iron girder.....	4	100	66	11 to 18	.....
Hennepin av.....	Great Northern Ry.....	Iron girder.....	7	240	56 to 106	12 to 18	.....
Holden st.....	M. & St. L. and G. N. Rys.....	Iron girder.....	3	126	32	8	16,000.00
Holden st.....	Elec. Short Line, Gt. Nor. and M. & St. L. Rys.....	Steel truss.....	.....	.....	.....	.....	33,610.00
Hennepin av.....	C. M. & St. P. Ry.....	Steel plate girder.....	3	95	66	11	18,049.91
Harvard st near Arlington st.....	St. P. and N. P. Rys.....	Steel bents.....	5	125	40	6	12,000.00
Lyndale av.....	M. & St. L. and G. N. Rys.....	Pratt truss girder, wooden trestle.....	19	469	36	8	34,789.72
Lyndale av.....	C. M. & St. P. H. & D. Div.....	Concrete slab.....	3	120	50	8	30,000.00
Laurel av.....	M. & St. L. and G. N. Rys.....	Iron Pratt truss, lattice girder, wooden trestle.....	4	1,874	18	6	84,492.13
W Lake st.....	C. M. & St. P. and M. & St. L. Rys.....	Single wooden truss, wooden trestle.....	2	1,155	36	.....	9,402.98
Main st NE.....	Great Northern Ry.....	Steel plate girder.....	1	44	56	9	34,946.13
Marshall st viaduct under Soo R. R.....	Great Northern Ry.....	Wooden trestle.....	6	96	.....	.....	1,200.00
Main st viaduct under Soo R. R.....	Great Northern Ry.....	Wooden trestle.....	6	96	.....	.....	1,200.00
Nicollet st.....	C. M. & St. P. H. & D. Div.....	Concrete slab.....	3	116-41	50	14	25,000.00
Oakland av.....	Great Northern Ry.....	Steel plate girder.....	1	2301	18	6	6,520.82
Park av.....	C. M. & St. P. H. & D. Div.....	Concrete slab.....	3	104	32	8	15,000.00
Portland av.....	C. M. & St. P. H. & D. Div.....	Concrete slab.....	3	1451	36	16	15,000.00
Pillsbury av.....	C. M. & St. P. H. & D. Div.....	Concrete slab.....	3	104	40	8	15,000.00
Pleasant av.....	C. M. & St. P. H. & D. Div.....	Concrete slab.....	3	87	32	8	15,000.00
Pleasant av.....	C. M. & St. P. H. & D. Div.....	Concrete slab.....	3	100	30	8	15,000.00
Plymouth av viaduct.....	Under Soo Ry.....	.....	3	751	.....	.....	8,000.00
Plymouth av viaduct.....	Under Omaha Ry.....	.....	3	84	.....	.....	8,000.00
Plymouth av viaduct.....	Under N. P. Ry.....	.....	3	82	.....	.....	10,000.00
Plymouth av viaduct.....	Omaha Ry.....	Steel plate girder.....	3	.....	.....	.....	.....
Pleasant st.....	St. P. and N. P. Rys.....	Iron lattice girder.....	3	95	27	8	6,000.00

Second st N.....	M. & St. L. and G. N. Rys.....	Steel and iron Pratt truss.....	1	137	36	8	12,500.00
Seventh st N.....	M. & St. L. and G. N. Rys.....	Plate girder, Pratt truss, wooden treble.....	7	606	39	6	37,207.00
Superior av.....	M. & St. L. and G. N. Rys.....	Steel girder.....	116	116	16	0	63,378.00
Second av S.....	C. M. & St. P. H. & D. Div.....	Concrete slab.....	3	112-61	30	8	15,000.00
Second St NE.....	Great Northern Ry.....	Steel plate girder.....	1	59	40	12	16,463.59
Seventh st NE.....	Soo st.....	Steel plate girder.....	3	167	40	12	26,431.60
Soo st viaduct.....	St. P. and N. P. Rys.....	Steel plate girder.....	1	39	40	.....	11,181.63
State st foot bridge.....	C. M. & St. P. H. & D. Div.....	Steel beams.....	3	94	8	.....	2,000.00
Stevens av.....	C. M. & St. P. H. & D. Div.....	Concrete slab.....	3	114-6	32	8	15,000.00
Third av S.....	C. M. & St. P. H. & D. Div.....	Concrete slab.....	3	112-61	30	8	15,000.00
Third st N.....	M. & St. L. and G. N. Rys.....	Iron Pratt truss and girder.....	11	555	36	8	50,000.00
10th av.....	C. M. & St. P. H. & D. Div.....	Concrete slab.....	3	1071	32	8	15,000.00
12th av.....	C. M. & St. P. H. & D. Div.....	Concrete slab.....	3	1181	32	8	15,000.00
13th av.....	C. M. & St. P. H. & D. Div.....	Concrete slab.....	3	129	32	8	15,000.00
Twentieth av N viaduct.....	Twentieth av N.....	Steel plate girder.....	3	106	32	8	15,000.00
W Twentieth-fifth st.....	M. & St. L. and G. N. Rys.....	Iron and steel Pratt truss, wood ap-proches.....	3	556	24	.....	8,848.65
31st av S near 27th st viaduct.....	Thirty-first av S.....	Steel plate girder.....	3	89	40	.....	12,428.14
Tenth av S viaduct.....	Tenth av S.....	Iron plate girder.....	1	46	125	.....	25,000.00
Tenth av S.....	Tenth av S.....	Iron plate girder.....	1	46	50	.....	10,000.00
33rd av NE over N. P. Ry.....	33rd av NE.....	Howe truss.....	11	566.55	18	6	14,000.00
University av NE over Soo Ry.....	36th st near Lake Calhoun.....	Iron plate girder.....	1	36	24	.....	6,185.48
University av NE.....	34th av NE.....	Wooden trestle.....	20	300	24	6	3,350.00
University av and 29th av NE.....	Great Northern Ry.....	Steel plate girder.....	9	145	24	6	1,650.00
University av SE.....	G. N. and N. P. Rys.....	Steel plate girder.....	1	84	40	12	17,906.62
Washington av N.....	Great Northern Ry.....	Steel girder.....	2	188	181	7	50,000.00
Washington av N.....	M. & St. L. and G. N. Rys.....	Iron Pratt truss.....	3	1771	38	12	49,648.00
Western av.....	M. & St. L. and G. N. Rys.....	Iron girder, steel girder.....	1	109	66	15	18,000.00
Western av near Upton.....	G. N. Ry, Osseo branch.....	Steel girder.....	3	177	2	11	25,000.00
Western av.....	M. St. P. R. & D. E. T. Co.....	Concrete slab.....	3	112.4	30	6	12,325.69
Washington av viaduct.....	Washington av.....	Iron girder.....	1	36	.....	6	10,450.00
							35,902.64



TABLE No. 44

## STATEMENT OF WORK DONE ON BRIDGES, CULVERTS, ETC., IN 1915

## New Bridges

Work was continued on 3rd av S bridge.  
 Minor finishing work on Plymouth av and 42nd av N bridges.

TABLE No. 45

## Bridge Repairs

Concrete arch bridge on Hiawatha av over Minnehaha Creek.  
 Finishing retaining wall and fill at east approach Plymouth av bridge.  
 Guard rail and repairs to Washington av S bridge over river.  
 Adjusting of 42nd av N bridge retaining wall, etc.  
 Miscellaneous repairs to various bridges.  
 Covering of Bassett's Creek from Bryant av to 10th av N.  
 River terminal (Sea Wall).

## SUMMARY OF EXPENDITURES

3rd av S bridge.....	\$344,999.13		
Plymouth av bridge.....	487.59	} Bond Issue.....	\$345,549.39
42nd av N bridge.....	62.67		
Hiawatha av bridge.....	\$5,831.76		
Washington av bridge.....	5,300.96	} Bridge repairs...	\$20,304.96
Miscellaneous repairs.....	9,172.24		
Covering Bassett's Creek.....			68,681.89
River Terminal (Sea Wall).....			34,528.96
Total.....			\$469,065.20

TABLE No. 46

## STREETS OPENED AND VACATED IN 1915

Street	From	To	Opened or Vacated	Book	Page	Date of Confirmation or Resolution	Width Opened or Vacated Feet	Width of Street in Feet	Length Opened in Feet	Length Vacated in Feet	Square Feet Opened
Beard av S.	W 47th st.	W 48th st.	O	12	47	Nov. 12, 1915	33	100	374	000	19,312
Bryant av N.	Laurel av.	Superior av.	V	13	30	Dec. 17, 1915	28 4	80 4	0.000	000	950,840
Central av & Division.	5th st. SE.	E. City Limits	O	12	1 & 2	Dec. 28, 1915	Irregular	00	0.000	000	30,000
County Road.	Vincent av N.	14th av N.	V	13	20	Aug. 30, 1915	Irregular	00	000	000	37,800
Elliot av.	E 42nd st.	E 41th st.	O	12	24	Jan. 20, 1916	60	00	000	000	000
1st av S.	E 47th st.	E 18th st.	O	13	8	Dec. 31, 1915	00	00	000	000	000
4th av NE.	Mississippi River.	Marshall st.	V	13	20	Aug. 12, 1915	00	00	00	00	000
E 41st st.	Minnehaha av.	Hiawatha av.	O	12	24	Sept. 10, 1915	00	80	000	000	21,000
E 42nd st.	Stevens st.	3rd av S.	O	13	7	Feb. 20, 1916	30 00	00	1,000	000	80,000
E 44th st.	28th av S.	Minnehaha av.	O	12	21	May 20, 1915	30	00	1,000	000	30,000
46th av S.	Lake st.	E 32nd st.	O	12	14	July 20, 1915	30	00	1,700	000	63,500
E 46th st.	Minnehaha av.	37th av S.	O	12	37	July 20, 1915	30	00	1,700	000	63,500
W 49th st.	Oliver av.	Penn. av.	O	13	4	Oct. 20, 1915	30	00	0.00	000	000
Harriet Place.	10th S.	11th st. S.	O	11	15	Nov. 12, 1915	Irregular	40	100	000	4,000
Harriet av.	W 44th st.	W 40th st.	O	12	42	Nov. 12, 1915	00	00	000	000	000
Irving av N.	Western av.	Cedar Lake Road.	O	12	35	Sept. 10, 1915	00	00	1.00	000	6,700
L st NE.	Division st.	Broadway st.	O	12	28	Aug. 13, 1915	00	00	1.00	000	70,000
Logan av N.	Chestnut av.	2nd av N.	O	12	31	Sept. 24, 1915	00	00	3.00	000	10,000
Nicollet Island.	Lot 19, block 2.	Nicollet Island Add.	V	12	30	June 25, 1915	Irregular	00	00	900	2,000
9th st N.	Hennepin av.	Hawthorn av.	O	12	20	April 30, 1915	Irregular	50	00	00	17,500
Thomas av S.	C. M. & St. P. Ry.	Lake st.	O	12	40	Sept. 24, 1915	50	00	0.00	000	100,000
Taft st.	E Hennepin av.	Summer st.	O	12	28	Aug. 13, 1915	00	00	000	000	18,000
24th av S.	49th st.	50th st.	O	13	8	Dec. 31, 1915	30	00	000	000	20,000
E 25th st.	46th av S.	41st st.	O	12	27	July 20, 1915	40 80	80	310	000	19,000
E 25th st.	37th av S.	Seabury av.	O	12	27	Feb. 20, 1915	00	00	107	000	7,000
25th av SE.	32nd st.	33rd st.	O	12	41	Sept. 10, 1915	00	00	1,200	000	63,000
25th av SE.	Come av.	E Hennepin av.	O	12	28	Jan. 2, 1916	00	00	1,100	000	1,100
36th av NE.	Marshall st.	37th av SE.	O	12	17	Jan. 20, 1916	00	00	0.00	000	000
E 36th st.	19th av S.	21st av S.	O	12	20	Feb. 20, 1916	00	33	0.00	000	17,100
Total											1,081,600
Acres											21.9



Girard av.	48th st.	50th st.	Both.	6	.....	1,387	2,231	80
Grand av.	41st st.	58th st.	Both.	6	.....	1,387	2,231	3,618
Harriet av.	30th st.	50th st.	Both.	6	.....	1,387	2,231	2,019
Homes av.	35th st.	36th st.	Both.	6	.....	1,387	2,231	1,387
Lyndale av.	37th st.	Minnehaha blvd.	Both.	6	.....	1,109	1,009	2,113
Noble av.	37th st.	Minnehaha blvd.	Both.	6	.....	1,109	3,484	4,091
Oakland av.	38th st.	39th st.	Both.	6	.....	537	17	17
Park av.	38th st.	42nd st.	Both.	6	.....	280	225	508
Pillsbury av.	34th st.	38th st.	Both.	6	.....	13	199	207
Pleasant av.	34th st.	50th st.	Both.	6	.....	747	609	1,356
Portland av.	40th st.	41st st.	Both.	6	.....	43	221	264
Queen av.	42nd st.	50th st.	Both.	6	.....	288	554	842
Richfield av.	Lake Calhoun.	39th st.	Both.	6	.....	590	590	590
Thomas av.	39th st.	45th st.	Both.	6	.....	66	66	66
3rd av S.	34th st.	42nd st.	Both.	6	.....	42	42	84
34th st.	Park av.	DuPont av.	Both.	6	.....	214	11	225
36th st.	3rd av S.	Portland av.	Both.	6	.....	131	256	387
37th st.	Aldrich av.	Bryant av.	South.	6	.....	130	2	132
39th st.	Harriet av.	3rd av S.	South.	6	.....	527	640	1,167
Upton av.	40th st.	50th st.	Both.	6	.....	311	1,133	1,444
Vincent av.	45th st.	50th st.	Both.	6	.....	491	1,741	2,232
Washburn av.	44th st.	51st st.	Both.	6	.....	229	144	373
Wentworth av.	43rd st.	48th st.	Both.	6	.....	578	1,789	2,367
Xerxes av.	45th st.	48th st.	Both.	6	.....	61	78	61
York av.	45th st.	47th st.	Both.	6	.....	78	78	78
Zenith av.	45th st.	47th st.	Both.	6	.....	340	338	678
Total.	.....	.....	.....	.....	.....	39,422	44,372	83,794
Cost.	Walk.	.....	.....	.....	.....	\$18,922.56	\$21,208.56	\$40,221.12
Inspection.	.....	.....	.....	.....	.....	756.26	851.21	1,607.47
Total.	.....	.....	.....	.....	.....	\$19,678.82	\$22,149.77	\$41,828.59

TABLE No. 39  
SUMMARY OF TABLE No. 38

WARDS	ARTIFICIAL STONE						TOTAL			
	Laid by Owner			Laid by City			Lineal Feet	Cost		
	Lineal Feet	Cost		Lineal Feet	Cost			Walk	Inspection	
		Walk	Inspection		Walk	Inspection				
First.....	1,675	\$804.00	\$32.13	2,239	\$1,074.72	\$42.94	3,914	\$1,878.72	\$75.07	\$1,953.79
Second.....	8,161	3,917.28	156.53	5,750	2,760.00	110.28	13,911	6,677.28	266.81	6,944.09
Third.....	9,956	4,778.88	190.95	7,332	3,519.36	140.63	17,288	8,298.24	331.58	8,629.82
Fourth.....	6,832	3,279.36	131.04	4,562	2,189.76	87.50	11,394	5,469.12	218.54	5,687.66
Fifth.....	2,244	1,077.12	43.04	606	290.88	11.62	2,850	1,368.00	54.66	1,422.66
Sixth.....	78	37.44	1.50	104	49.92	1.99	182	87.36	3.49	90.85
Seventh.....	12,768	6,128.64	244.89	14,424	6,923.52	276.65	27,192	13,052.16	521.54	13,573.70
Eighth.....	9,810	4,708.80	188.16	3,983	1,911.84	76.39	13,793	6,620.64	264.55	6,885.19
Ninth.....	5,032	2,415.36	96.51	6,722	3,226.56	128.93	11,754	5,641.92	225.44	5,867.36
Tenth.....	19,571	9,394.08	375.37	12,852	6,168.96	246.50	32,423	15,563.04	621.87	16,184.91
Eleventh.....	478	229.44	9.17	627	300.96	12.02	1,105	530.40	21.19	551.59
Twelfth.....	15,398	7,391.04	295.46	43,483	20,871.84	834.12	58,881	28,262.88	1,129.58	29,392.46
Thirteenth.....	39,422	18,922.56	756.26	44,372	21,298.56	851.21	83,794	40,221.12	1,607.47	41,828.59
Total.....	131,425	\$63,084.00	\$2,521.01	147,056	\$70,586.08	\$2,820.78	278,481	\$133,670.88	\$5,341.79	\$139,012.67
Miles.....	24.89			27.85			52.74			

## RATE OF ASSESSMENT PER LINEAL FOOT

Width in Feet	KIND		Rate
2	Artificial Stone.....		\$ .16
4	Artificial Stone.....		.32
6	Artificial Stone.....		.48
8	Artificial Stone.....		.64
15	Artificial Stone.....		1.20

TABLE No. 43  
BRIDGES OVER RIVERS AND CREEKS

NAME	OVER	KIND	No. Spans	Total Length Feet	Width		Total Cost
					Road-way	Side-walk	
Franklin av. ....	Mississippi river. ....	Iron Pratt truss. ....	5	1,025	18 1/2	6	\$143,430.27
Forty-second av N. ....	Mississippi river. ....	{ Steel bow truss. ....	4	1,372	36	8	180,300.00
Hennepin steel arch. ....	West channel Mississippi river. ....	Concrete approach. ....	2	544	58	12	266,375.32
Hennepin island. ....	Mississippi river. ....	2 and 3 hinged arch. ....	2	360	20	17	6,414.51
Lake st. ....	Mississippi river. ....	Steel bent. ....	1	1,270	33	6	274,000.00
Plymouth av. ....	Mississippi river. ....	Iron braced arch. ....	6	1,561	36	8	152,417.00
Stone arch. ....	Mississippi river. ....	{ Steel bow truss. ....	3	354	18	6	70,427.00
Tenth av S. ....	East channel Mississippi river. ....	{ stone arch and 1 steel girders. ....	5	1,143	58	12	160,000.00
Thirty-second av N. ....	Mississippi river. ....	Iron Pratt truss and wooden trestle. ....	8	805	17	15 1/2	109,110.03
Washington av S. ....	Mississippi river. ....	Iron bow truss. ....	4	838	36	6	108,760.00
Gerber baths. ....	Mississippi river. ....	Iron Pratt truss. ....	5	1,084	38	6	212,689.47
First st and Sixth av S. ....	Mississippi river. ....	Concrete piers, wooden joists. ....	6	180	14	7	2,000.00
Aldrich av N. ....	Minneapolis Mill Co.'s canal. ....	Iron plate girder. ....	14	266	36	.....	10,004.52
Bryant av N. ....	Bassett's creek. ....	Concrete arch. ....	32	234	32	6	3,000.00
Cedar Lake road. ....	Bassett's creek. ....	Stone arch. ....	1	30	42	6	4,915.80
Dupont av N. ....	Bassett's creek. ....	Stone arch and wooden trestle. ....	1	30	40	11	9,233.75
Dupont av N (Elec. Short Line) ....	Bassett's creek. ....	Stone abutments, concrete floor. ....	1	400	22	.....	165.60
Eighth av N. ....	Bassett's creek. ....	Concrete slab. ....	1	708	.....	.....	31,637.95
First st N. ....	Bassett's creek. ....	Concrete arch. ....	1	20	.....	6	2,125.00
Fourth st N. ....	Bassett's creek. ....	Concrete arch. ....	1	28	36	.....	3,858.42
Fifth st N. ....	Bassett's creek. ....	Stone arch. ....	1	29	67 1/2	15	6,000.00
Lyndale av N. ....	Bassett's creek. ....	Stone arch. ....	1	29	53 1/2	15	8,040.29
Penn av N. ....	Bassett's creek. ....	Concrete floor. ....	1	244	53 1/2	15	4,000.00
Second av N. ....	Bassett's creek. ....	Stone arch. ....	1	29	40	11 1/2	6,149.68
Sixth av N near Keegan's Lake. ....	Bassett's creek. ....	Concrete culvert. ....	1	134	32	6	7,664.00
Tenth av N. ....	Bassett's creek. ....	Stone arch. ....	1	30	53 1/2	15	6,922.49
Western av near Upton. ....	Bassett's creek. ....	Pile bridge. ....	1	20	17 1/2	.....	140.27
Concrete Culvert. ....	Bassett's creek from Dupont to 10th av N. ....	Concrete arch. ....	1	26	24	6	4,322.17
		Steel "I" beams and concrete. ....	1	156	18	.....	6,026.57
		Stone arch. ....	1	31	52 1/2	15	10,633.63
		Stone arch. ....	1	28	22	12	7,154.30
		Concrete slab. ....	1	20	44	6	1,980.39
		Concrete arch. ....	1	32	36	.....	6,516.28
		10th av N. ....	1	1,725	.....	.....	1,000.00



TABLE No. 43  
BRIDGES OVER RAILWAYS AND STREETS

NAME	OVER	KIND	No. Spans	Total Length Feet	Width		Total Cost
					Road-way	Side-walk	
Aldrich av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	120	20	8	\$15,000.00
Borden av.	Elec. Short Line	Steel girder.	4	109			7,590.00
Broadway and Central.	Great Northern Ry.	Steel plate girder.		534	40	12	126,103.06
Bryant av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	120	30	8	15,000.00
Central and Broadway.	C. M. & St. P., H. & D. Div.	Concrete slab.	2	120	30	8	15,000.00
Central and Ninth st.	Great Northern Ry.	Steel plate girder.	2	200	56	12	55,186.86
Chicago av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	129	52	8	15,000.00
Clinton av.	C. M. & St. P., H. & D. Div.	Concrete slab.	6	228	30	8	20,000.00
Collins av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	114	30	8	15,000.00
Collins av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	120	30	8	15,000.00
Como and Tenth av SE viaduct	Como av SE.	Iron plate girder.			100		50,000.00
Como and 23rd av SE viaduct.	St. P. & N. P. Rys.	Iron plate girder.	4	116 1/2			15,000.00
Church st.	G. N. Ry. Osseo Branch.	Iron lattice girder.	3	82	26 1/2	8	4,000.00
Cedar Lake road.	Elec. Short Line.	Iron bowstring truss	1	78	42	10	4,000.00
Cedar Lake road.	Boulevard	Concrete slab.	1	35	34	6	12,015.00
Dean blvd viaduct.	C. M. & St. P., H. & D. Div.	Iron girder.	3	94 1/2	9		5,200.00
DuPont av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	120	30	8	15,000.00
11th av S.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	108 1/2	30	8	15,000.00
Elliot av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	109	32	8	15,000.00
Emerson av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	120	30	8	15,000.00
First av S.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	115-41	36	8	18,000.00
First av N.	C. M. & St. L. and G. N. Rys.	Iron Pratt truss	3	110	36	6	10,000.00
4th av S.	C. M. & St. P., H. & D. Div.	Concrete slab.	10	308	36	8	30,000.00
Fourth st N.	M. & St. L. and G. N. Rys.	Iron Pratt truss and plate girder	17	516 1/2	36	6	48,000.00
Fifth st N.	M. & St. L. and G. N. Rys.	Iron Pratt truss and plate girder.	14	482	36	6	43,500.00
Fourth av N.	M. St. P. and N. P. Rys.	Iron lattice girder.	1	48	28	8	5,000.00
5th st NE viaduct under Soo R. R.	M. E. and M. & St. L. Rys.	Iron Warren truss	8	109	29		1,350.00
First st S near Third av.	Great Northern Ry.	Steel plate girder.	1	82	36	8	7,000.00
Fourth st NE.	Great Northern Ry.	Steel plate girder.	1	12	36	12	13,007.61
Fifth st NE.	C. M. & St. P., H. & D. Div.	Concrete slab.	4	216	40	6	28,528.07
14th av S.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	156	32	8	15,000.00
15th av SE near 8th st viaduct.	Fifteenth av SE.	Iron plate girder.	1	59	100		22,886.03



TABLE No. 43—Continued  
BRIDGES OVER RAILWAYS AND STREETS

NAME	OVER	KIND	No. Spans	Total Length Feet	Width		Total Cost
					Road-way	Side-walk	
Fifteenth av SE	Great Northern Ry.	Iron girder, steel girder.	3	100	50	15	80,822.00
Fourth at SE and Fifteenth av.	Great Northern Ry.	Iron girder, steel girder.	4	180	50	15	15,000.00
Fremont av.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	120	30	8	15,000.00
Garfield av.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	130	30	8	15,000.00
Grand av.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	100	30	8	15,000.00
Harriet av.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	100	30	8	15,000.00
Hennepin av.	M. & St. L. Ry.	Iron girder.	4	100	66	11 to 13	.....
Hennepin av.	Great Northern Ry.	Iron girder.	7	240	56 to 106	12 to 18	16,000.00
Holden st.	M. & St. L. and G. N. Rys.	Iron girder.	3	126	32	8	33,610.00
Holden st.	Elec. Short Line, Gt. Nor. and C. M. & St. P. Rys.	Steel truss.	.....	.....	66	11	18,048.01
Hennepin av.	C. M. & St. P. Ry.	Steel plate girder.	3	95	46	6	12,000.00
Harvard st near Arlington st.	St. P. and N. P. Ry.	Steel bents.	5	125	46	6	34,780.72
Lyndale av.	M. & St. L. and G. N. Rys.	Pratt truss girder, wooden trestle.	13	469	36	8	30,000.00
Lyndale av.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	120	50	8	84,492.13
Laurel av.	M. & St. L. and G. N. Rys.	Iron Pratt truss, lattice girder, wooden trestle.	4	1,874	18	0	9,402.98
W Lake st.	C. M. & St. P. and M. & St. L. Rys.	Single wooden truss, wooden trestle	2	1,155	36	.....	34,946.13
Main st NE	Great Northern Ry.	Steel plate girder.	1	44	56	9	1,200.00
Marshall st viaduct under Soo R. R.	.....	Wooden trestle.	6	96	.....	.....	23,000.00
Main st viaduct under Soo R. R.	.....	Concrete slab.	3	116-41	50	14	6,520.82
Nicollet st.	C. M. & St. P. H. & D. Div.	Steel plate girder.	1	230 1/2	18	6	15,000.00
Oakland av.	Great Northern Ry.	Concrete slab.	3	104	32	8	15,000.00
Park av.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	145 1/2	36	10	15,000.00
Portland av.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	104	40	8	15,000.00
Pillsbury av.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	87	32	8	15,000.00
Pleasant av.	C. M. & St. P. H. & D. Div.	Concrete slab.	3	100	30	8	8,000.00
Plymouth av viaduct	Under Soo Ry.	.....	3	75 1/2	.....	.....	10,000.00
Plymouth av viaduct	Under Omaha Ry.	Steel plate girder.	3	84	.....	.....	6,000.00
Plymouth av viaduct	Under N. P. Ry.	Steel plate girder.	3	82	.....	.....	.....
Plymouth av viaduct	Omaha Ry.	Steel plate girder.	3	95	27	8	.....
Pleasant st.	St. P. and N. P. Rys.	Iron lattice girder.	3	.....	.....	.....	.....

Second st. N.	M. & St. L. and G. N. Rys.	Steel and iron Pratt truss.	1	137	36	8	12,500.00
Seventh st. N.	M. & St. L. and G. N. Rys.	Plate girder, Pratt truss, wooden treads.	7	606	30	6	37,297.00
Superior av.	M. & St. L. and G. N. Rys.	Steel girder.	3	116	10	6	13,276.00
Second St. N.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	112-61	30	8	15,000.00
Second St. NE.	Great Northern Ry.	Steel plate girder.	1	59	40	12	16,433.59
Scott st. NE.	Great Northern Ry.	Steel plate girder.	3	167	40	12	26,431.60
Soo st. NE.	St. P. and N. P. Rys.	Steel plate girder.	1	30	40	.....	11,151.63
State st. NE.	St. P. and N. P. Rys.	Steel plate girder.	3	94	30	.....	2,000.00
State st. NE.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	114-6	30	8	15,000.00
Stevens av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	112-61	30	8	15,000.00
Third av. S.	M. & St. L. and G. N. Rys.	Iron Pratt truss and girder.	11	555	36	8	50,000.00
Third av. N.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	1071	32	8	15,000.00
10th av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	1181	32	8	15,000.00
12th av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	129	32	8	15,000.00
13th av.	C. M. & St. P., H. & D. Div.	Concrete slab.	3	129	32	8	15,000.00
Twentieth av. N.	Twentieth av. N.	Steel plate girder.	3	106	.....	.....	10,000.00
W Twentieth-fifth st.	M. & St. L. and G. N. Rys.	Iron and steel Pratt truss, wood approaches.	3	556	24	.....	8,848.65
31st av S near 27th st viaduct.	Thirty-first av S.	Steel plate girder.	3	89	24	.....	12,428.14
Tenth av S.	Tenth av S.	Iron plate girder.	3	46	125	.....	25,000.00
Tenth av S.	Tenth av S.	Iron plate girder.	1	46	50	.....	10,000.00
33rd av NE over N. P. Ry.	33rd av NE.	Howe truss.	11	566-55	18	6	14,000.00
University av NE over Soo Ry.	34th av NE.	Iron plate girder.	1	36	24	.....	6,185.48
University av NE over Soo Ry.	36th st near Lake Calhoun.	Wooden trestle.	20	300	24	6	3,350.00
University av NE.	34th av NE.	Wooden trestle.	9	145	24	6	1,650.00
University av SE.	Great Northern Ry.	Steel plate girder.	1	84	40	12	17,996.62
University av and 29th av NE.	G. N. and N. P. Rys.	Steel plate girder.	2	188	2-181	17	50,000.00
Washington av N.	Great Northern Ry.	Steel girder.	3	1771	39	12	49,648.00
Washington av N.	M. & St. L. and G. N. Rys.	Iron Pratt truss.	3	109	66	15	18,000.00
Western av.	M. & St. L. and G. N. Rys.	Iron girder, steel girder.	1	177	2-20	11	25,000.00
Western av near Upton.	G. N. Ry., Osseo branch.	Steel girder.	3	112-4	30	6	12,325.69
Western av.	M. St. P. R. & D. E. T. Co.	Concrete slab.	1	36	.....	6	10,450.00
Washington av viaduct.	Washington av.	Iron girder.	1	36	.....	6	35,902.64

TABLE No. 53  
WATER MAINS LAID DURING THE SEASON OF 1913

STREET	FROM	TO	Size in Inches	Number of Extension	Length in Feet	Cost	Rate of Assessment per Front Foot
•Aldrich av A.	27th st.	42nd st.	24	D 3074	9,772.1	\$31,002.50	..... \$ .09
•Aldrich av S.	49th st.	401 st.	16	D 3234	353.6	401.07	.....
•Aldrich av S.	42nd st.	48th st.	16	D 3122	3,062.0	12,493.53	..... .90
•Bryant av N.	35th av N.	41st av N.	6	3136	2,019.0	4,891.22	.....
•Bryant av N.	38th av N.	45th av N.	6	3167	418.0	654.86	..... .78
•Buchanan st.	30th av NE.	31st av NE.	6	3166	633.6	995.19	..... .79
•Busch Terrace	Pleasant av.	Harriet st.	6	3192	402.0	627.34	..... .64
•Central av.	1st av SE.	3rd av SE.	12	3246	1,287.0	3,727.73	..... .90
•Chicago av.	40th st.	48th st.	12	3123	1,300.0	2,821.26	..... .09
•Chowen av.	St. Paul av.	Shelton lot 36 West End 2nd Add	8	3197	373.0	627.86	..... .07
•Columbus av.	46th st.	50th st.	6	part 3197	326.0	533.37	..... .07
•Columbus av.	46th st.	50th st.	6	part 3190	2,086.0	3,792.16	..... .70
•Division st SE.	18th av.	20th av.	12	3191	237.9	421.65	..... .81
•Division st SE.	18th av.	20th av.	12	3152	700.0	1,686.81	..... .04
•Dupont av S.	51st st.	Minnehaha blvd.	8	3180	1,336.0	4,033.22	..... .63
•Emerson av N.	42nd st.	50th st.	6	3255	665.6	1,176.86	..... .78
•Essex st SE.	32nd st.	44th st.	6	3162	3,693.0	4,653.70	..... .63
•Essex st S.	38th av N.	39th av N.	6	3219	1,332.0	1,732.39	..... .05
•Essex st S.	38th av N.	39th av N.	6	3156	665.0	975.69	..... .73
•Essex st S.	38th av N.	39th av N.	6	3156	382.0	861.58	..... .90
•Essex st S.	38th av N.	39th av N.	6	3069	1,437.7	10,804.61	.....
•Essex st S.	38th av N.	39th av N.	6	3070	1,947.7	9,505.28	.....
•Essex st S.	38th av N.	39th av N.	6	D 3008	2,038.2	17,657.48	.....
•Essex st S.	38th av N.	39th av N.	6	3120	907.2	1,647.17	..... .80
•Essex st S.	38th av N.	39th av N.	6	3150	885.07	885.07	..... .90
•Essex st S.	38th av N.	39th av N.	6	3209	683.9	1,471.80	..... .04
•Essex st S.	38th av N.	39th av N.	6	3205	332.8	523.17	..... .78
•Essex st S.	38th av N.	39th av N.	6	3128	657.0	855.46	..... .05
•Essex st S.	38th av N.	39th av N.	6	3140	670.0	937.00	..... .70
•Essex st S.	38th av N.	39th av N.	6	3178	1,314.0	2,127.12	..... .80
•Essex st S.	38th av N.	39th av N.	6	3227	520.6	628.48	..... .50
•Essex st S.	38th av N.	39th av N.	6	3230	484.0	636.01	..... .06
•Essex st S.	38th av N.	39th av N.	6	3141	655.0	897.80	..... .09

*42nd st W	Nicollet av	Dupont av	10	3076	3,035.0	12,809.73	74
*43rd av S	44th st	16th st	8	3143	1,285.0	2,511.98	83
*43rd st E	12th av S	16th av S	6	3206	758.5	1,740.68	50
*43rd av S	30th st	40th av S	6	3249	623.0	1,078.50	75
*43rd av S	44th st	45th st	6	3250	622.0	1,078.50	70
*44th av S	Lake st	33d st	6	3254	1,738.16	2,280.04	74
*44th av S	44th st	45th st	6	3170	620.0	1,078.38	71
*45th st E	Hiawatha av	Spelling av	6	3160	707.0	1,020.01	73
*45th av S	44th st	45th st	6	3181	625.0	1,020.01	65
*46th av S	Lake st	31st st	6	3205	470.0	1,038.04	84
*47th av S	32nd st	33rd st	12	3100	640.0	1,078.72	78
*48th st W	Lyndale av	Bryant av	12	3078	584.0	1,397.10	66
*48th st W	32nd st	34th st	12	3222	1,191.0	1,643.49	76
*50th st W	Harriet av	Lyndale av	8	3104	680.0	1,001.69	69
*50th st W	Queen av	Russell av	12	3201	367.0	1,911.90	79
*50th st W	Xerxes av	Beard av	12	3242	1,260.3	2,901.86	83
*51st st W	Prospect av	Lyndale av	12	3124	488.0	1,201.16	63
*Garfield av S	49th st	19 1/2 st	6	3232	350.0	1,453.63	75
*Garfield av S	49 1/2 st	30th st	6	3245	341.1	500.93	63
*Garfield av S	34th st	35th st	6	3240	667.0	770.2	58
*Grand av	40th st W	35th st W	6	3184	622.0	1,007.71	81
*Grand av S	14th st W	17th st	6	3243	2,007.0	2,552.13	64
*Harriet av	19th st	30th st	6	3237	661.0	875.68	66
Highview Place	E line lot 11 Blk 4	Prospect av	6	3126	263.0	380.32	72
Johnson st NE	32nd av	33rd av	12	3165	658.0	1,508.86	75
Lake Harriet blvd	10 ft. N of alley	14th st	6	3151	360.0	615.14	90
Layman av S	N line lot 1 blk 4 Barnes Add.	29th st	6	3179	307.5	554.0	89
Logan av S	Lincoln av	Franklin av W	6	3160	473.0	804.04	85
*Lowry av NE	Lincoln st	Johnson st	12	3214	335.0	894.95	79
*Lowry av NE	Hayes st	City Limits E	12	3215	1,934.0	4,878.25	70
*Main st NE	35th av NE	37th av NE	12	3157	1,308.6	3,438.99	85
*Minnehaha pkwy	27th av S	34th av S	6	3244	2,795.5	3,836.24	69
*Morgan av N	36th av N	37th av N	6	3218	681.0	1,071.16	78
9th st N	N line lot 4 blk 6	Hawthorne av	6	3202	148.0	366.75	Elwell law
Oakland av	46th st	48th st	6	3193	1,283.0	2,180.56	85
Oliver av N	Lowry av	37th av N	6	3134	3,251.0	5,022.48	77
Penn av N	41st av N	42nd av N	12	3216	662.6	1,962.12	90
Penn av S	49th st	50th st	8	3150	612.4	1,024.67	68
*Portland av	46th st	48th st	8	3236	1,398.6	2,492.45	78
*Powderhorn Terrace	12th av S	14th av S	6	3207	702.9	1,027.93	73
Prospect av	Highview Place	51st st W	12	3125	712.0	1,695.26	70
Russell av	49th st	50th st	6	3195	726.0	1,114.12	70
*Superior av	Lyndale av	Waverly Place	24	3072	3,576.0	18,084.30	90
6th st N	1st av	3rd av	6	3161	831.6	1,944.24	90
6th st S	23rd av	24th av	6	3127	328.6	457.67	70
*7th st NE	23rd av	24th av	6	3229	403.8	521.00	65

TABLE No. 53—Continued  
WATER MAINS LAID DURING THE SEASON OF 1915

STREET	FROM	TO	Size in Inches	Number of Extension	Length in Feet	Cost	Rate of Asses- ment per Front Foot
• 7th st NE.	Lowry av.	37th av.	6	3213	1,281.0	1,426.49	.59
• 17th st E.	5th av S.	Portland av.	6	3236	1,352.4	1,541.48	.77
• 24th st NE.	Division st.	Summer st.	8	3231	1,083.0	2,411.45	.55
• 24th st NE.	Lowry av.	37th av NE.	6	3265	406.6	847.35	.70
• 12th av S.	Washington av N.	O'Brien Place.	6	3267	426.57	426.57	.90
• 22nd st S.	22nd st.	23rd st.	6	3137	327.0	672.07	.58
• 20th av SE.	Fairmount st.	Como av.	6	3137	327.0	672.07	.58
• 20th av S.	38th st.	3rd Add.	8	3204	600.0	824.00	.58
• 21st av S.	38th st.	3rd Add.	8	3211	473.0	680.45	.6
• 22nd st E.	2nd st NE.	3rd Add.	6	3163	370.6	473.06	.63
• 22nd st E.	18th av S.	3rd Add.	8	3202	413.8	681.04	.71
• 24th av S.	38th st.	C. M. & St. P. R. right of way	36	3067	598.0	6,393.33	73
• 26th av S.	36th st.	S line lot 6 blk 1 Byrons Add.	12	3144	334.0	737.64	.65
• 26th av S.	36th st.	39th st.	6	part 3180	1,970.4	2,558.18	.66
• 27th av S.	34th st.	37th st.	6	3226	650.0	863.64	.67
• 27th st W.	Lyndale av.	S line lot 8 blk 9 Hulls Add.	6	part 3138	2,332.0	3,120.02	.74
• 28th av S.	45th st.	Aldrich av.	24	3073	287.1	2,071.09	.59
• 28th av S.	31st st.	46th st.	12	3142	615.0	1,458.54	.62
• 28th av S.	504 ft N Minnehaha blvd.	N line lot 16 blk 6 Rollins 2d Ad	6	3177	212.0	240.86	.66
• 28th av N.	50th st.	Minnehaha blvd.	12	3182	694.6	1,580.13	.62
• 30th av N.	DuPont av N.	51st st.	12	3183	619.0	1,327.68	.90
• 30th av S.	40th st.	N line lot 13 blk 9 Silver Lake	6	3135	151.0	353.00	.66
• 31st av S.	48th st.	Ad.	6	3171	1,391.0	1,836.41	.64
• 32nd st E.	47th av S.	42nd st.	8	3212	553.6	842.65	.90
• 33rd av S.	45th st.	48th av S.	8	3231	386.0	865.53	.79
• 33rd av S.	46th st.	46th st.	12	3172	658.6	1,589.57	.64
• 35th av S.	Lake st.	47th st.	6	3173	585.6	745.95	.70
• 35th av S.	28th st.	33rd st.	6	3148	1,787.0	2,509.21	.68
• 35th av S.	37th st.	Lake st.	6	part 3148	1,225.0	1,678.18	.76
• 36th st E.	19th av.	38th st.	8	3221	582.4	884.30	.74
• 36th st W.	Aldrich av.	20th av S.	8	3210	328.0	611.10	.81
		DuPont av.	16	3075	994.0	3,435.60	

*36th av N	Morgan av	Oliver av	12	3217	661.0	1,801.45	.82
*36th av S	50th st	51st st	6	3146	606.0	1,661.36	.55
**37th st E	18th av	Cedar av	24	3071	309.6	1,572.63	
*37th av S	31st st	34th st	6	3174	1,934.6	2,993.92	.77
38th av S	33rd st	34th st	6	3145	657.0	963.67	.73
39th av S	42nd st	43rd st	6	3139	670.0	914.47	.68
39th av S	38th st	39th st	6	3175	667.0	926.64	.69
*39th av S	32nd st	34th st	8	3228	1,327.7	2,322.45	.75
*University av NE	35th av	37th av	12	3158	1,388.6	3,674.99	.86
Upton av N	19th av	McNair av	6	3200	983.0	1,333.35	.67
Van Buren st NE	49th st	50th st	12	3185	659.0	1,489.42	.73
Vincent av N	Columbia blvd	36th av NE	6	3133	196.3	359.55	.90
Washington st NE	Crystal Lake Av	Lowry av	6	3168	1,01.8	1,612.21	.79
*Zenith av S	18th av	19th av NE	12	3164	424.6	1,342.04	.90
	38th st	39th st	6	3238	647.6	1,898.03	.69
Total					125,659.1	\$311,163.67	

\*To be assessed in tax 1914.

\*\*Not assessed.

TABLE No. 53--Continued  
WATER MAINS LAID DURING THE SEASON OF 1915  
SUMMARY

	Size in Inches	Number of Extension	Length in Feet	Cost	Rate of Assess- ment per Front Foot
Stubs.....	6	.....	1,729.3	.....	.....
Stubs.....	8	.....	145.6	6,091.83	.....
Stubs.....	12	.....	86.2	.....	.....
Pipe.....	6	.....	63,908.2	93,208.24	.....
Pipe.....	8	.....	12,766.9	21,127.40	.....
Pipe.....	12	.....	18,780.6	46,634.67	.....
Pipe.....	16	.....	10,227.0	32,862.08	.....
Pipe.....	24	.....	15,892.5	82,385.80	.....
Pipe.....	30	.....	1,437.7	10,894.61	.....
Pipe.....	36	.....	2,636.2	24,050.81	.....
Total.....		.....	125,659.1	\$311,163.67	.....
Incidental Improvements.....		.....		13,312.47	.....
Grand Total.....		.....		\$324,476.14	.....

# SUMMARY FOR 1913 AND 1914, 48 INCH STEEL DISCHARGE MAIN

STREET	FROM	TO	Size, in Inch	Length, in ft	Cost
Central av.	31st av.	17th av NE	32	1,200	500.00
Division st.	Lincoln st.	11th av SE	32	1,000	400.00
11th av SE.	2nd st NE	10th av SE	32	1,200	480.00
11th av SE.	Stine (E. N. Ry.	Division st.	32	1,200	480.00
Lowry av.	Polk st.	Division st.	32	1,200	480.00
Lowry av.	Division st.	20th av NE	32	1,200	480.00
Polk st NE.	Lowry av.	20th av NE	32	1,200	480.00
Polk st.	20th av.	Polk st.	32	1,200	480.00
20th av NE.	Tyler st.	Polk st.	32	1,200	480.00
31st av NE.	Central av	Tyler st.	32	1,200	480.00
Total				10,800	4,320.00



TABLE No. 54  
EXTENSIONS AND ADDITIONS MADE TO ELECTRIC CONDUIT SYSTEM IN 1915

MINNEAPOLIS GENERAL ELECTRIC COMPANY			CONDUITS		DUCTS		
STREET	FROM	TO	Kind Duct	Length Lineal Feet	Number	Lineal Feet	Number of Manholes
Alley bet 9th & 10th st Nic. & Marquette	Manhole.	Property line.	Iron pipe.	12	3	36	1
Alley bet 9th & 10th st Henn. & Mary Pl.	Manhole.	Property line.	Iron pipe.	17	1	51	1
Cedar av at Minnehaha.	Manhole.	Pole.	Iron pipe.	17	1	51	1
8th st bet Nicollet and Marquette	Manhole.	Property line.	Iron pipe.	80	3	240	7
8th st N bet Hennepin and 1st av N	Manhole.	Property line.	Iron pipe.	24	1	72	1
1st st N bet Hennepin and 1st av N	Manhole.	Property line.	Iron pipe.	24	1	72	1
4th st S bet 7th and 6th st S	Manhole.	Property line.	Iron pipe.	35	3	105	4
4th st S bet Nicollet and Marquette	Manhole.	Curb.	Iron pipe.	45	3	135	1
4th st S bet 5th and 6th st S	Manhole.	Property line.	Iron pipe.	60	3	180	1
5th st S bet 6th and 7th st S	Manhole.	Property line.	Iron pipe.	25	3	75	1
4th st W bet Aldrich and Bryant	Pole	Property line.	Iron pipe.	22	1	66	1
Grand st NE	25th av NE	Property line.	Clay	665	6	3,990	1
Hannan Pl. 10th st	Curb.	Safety Isle.	Iron pipe.	92	1	276	1
Hennepin av bet 7th and 8th st	Manhole.	Property line.	Iron pipe.	26	1	78	1
Henn. av bet Maple st and Harmon Pl.	Manhole.	Curb.	Iron pipe.	16	2	48	1
Hennepin av at 2nd and Parkway	Manhole.	Safety Isle.	Iron pipe.	24	1	72	1
Hiawatha av bet Douglas and Summit	Pole	Property line.	Iron pipe.	140	1	420	1
Hiawatha av bet 31st and 32nd st	Manhole.	Property line.	Iron pipe.	52	1	156	1
Lake st bet 2nd and 3rd av	Curb.	Property line.	Iron pipe.	50	1	150	1
Lake st bet 4th and 5th av	Curb.	Curb.	Iron pipe.	50	1	150	1
Lyndale av bet Groveland and Summit	For new manhole.						
Marquette av bet 9th and 10th st	Manhole.	Property line.	Iron pipe.	35	3	105	1
Marquette av bet 10th and 11th st	Curb.	Curb.	Iron pipe.	5	1	15	1
Marquette av bet 12th and 13th st	Curb.	Curb.	Iron pipe.	50	1	150	1
Nicollet av bet 5th and 6th st	Manhole.	Curb.	Iron pipe.	16	3	48	1
Nicollet av bet 6th st	Manhole.	Curb.	Iron pipe.	30	3	90	1
Nicollet av bet 6th and 7th st	Manhole.	Curb.	Iron pipe.	39	4	117	1
Nicollet av bet 29th st	Curb.	Curb.	Iron pipe.	123	1	369	1
Nicollet av bet Elroy and Lake st	Curb.	Curb.	Iron pipe.	50	1	150	1
Nicollet bet Lake and 31st st	Curb.	Curb.	Iron pipe.	50	1	150	1
9th st S bet Hennepin and Mary Pl.	Manhole.	Property line.	Iron pipe.	44	3	132	1
Plymouth av bet Washington and 3rd st	Pole	Pole.	Iron pipe.	90	1	270	1

Randolph st NE.	26th av NE.	29th av NE.	Clay.	2,004	0	12,024	5
Riverside av at Cedar av.	Curb.	Safety Isle.	Iron pipe.	55	1	55	
Spruce Pl bet Hennepin and Harmon.	Hennepin.	Alley.	Clay.	178	8	1,421	1
2nd st bet 1st and 2nd av N.	Manhole.	Property line.	Iron pipe.	50	4	224	
6th av SE at Bridge.	Manhole.	Bridge.	Iron pipe.	62	3	180	
6th st bet 2nd and 3rd av S.	Curb.	Property Line.	Iron pipe.	25	1	25	
6th st at 3rd av S.	Manhole.	Property line.	Iron pipe.	22	2	44	
6th st S.	Manhole.	5th av S.	Iron pipe.	50	4	230	
3rd av S bet Washington and 3rd st.	Manhole.	Property line.	Clay.	408	12	4,896	2
3rd av S bet 9th and 10th st.	Manhole.	Property line.	Iron pipe.	309	3	1,107	
3rd av N bet 4th and 5th st.	Property line.	Property line.	Iron pipe.	93	3	180	
10th st S.	Hennepin.	Harmon.	Clay.	270	1	270	
10th st S bet Marquette and 2nd av.	Manhole.	Property line.	Iron pipe.	138	3	414	2
10th st S bet Marquette and Nicollet.	Manhole.	Curb.	Iron pipe.	61	1	61	
26th av NE.	Manhole.	Randolph st.	Iron pipe.	53	3	150	
29th av NE.	Grand st.	Clay.	Iron pipe.	30	3	108	
36th av N.	Marshall st.	Grand st.	Clay.	300	4	1,441	1
Washington av S bet 14th and 15th av.	2nd st.	Washington.	Clay.	300	6	1,800	1
	For new manhole.		Fibre	128	4	2,100	1
Total feet.				6,774		33,118	22
Total miles.				1.28		0.33	
Total manholes.							

TABLE No. 54—Continued  
EXTENSIONS AND ADDITIONS MADE TO ELECTRIC CONDUIT SYSTEM IN 1915

NORTHWESTERN TELEPHONE COMPANY			CONDUITS		DUCTS		
STREET	FROM	TO	Kind Duct	Length Lineal Feet	Number	Lineal Feet	Number of Manholes
Alley bet 6th & 7th st Henn. & Nicollet.	Property line.	Property line.	Iron pipe.	62	1	62	1
Alley bet 4th & 5th av Franklin & 22nd st.	Pole.	Pole.	Clay.	26	1	26	1
Alley bet 10th & 11th st Nic. & Mary Pl.	Manhole.	Property line.	Iron pipe.	145	1	145	1
Alley bet 1st & 2nd av N and 1st & 2nd st N	Manhole.	Property line.	Iron pipe.	1,984	12	23,808	7
Beard av.	44th st.	47th st.	Clay.	420	2	840	1
				30	24	720	4
Cedar Lake Road.	Western av.	Superior blvd.	Clay.	5,407	6	32,442	1
				383	1	383	1
			Iron pipe.	143	6	858	15
			Wood W. C.	257	6	1,542	1
Central av at 27th av.	Manhole.	Pole.	Clay.	35	1	35	1
Chicago av at 28th st.	Manhole.	Manhole.	Clay.	117	1	117	1
Clinton av bet 38th and 39th st.	Manhole.	Pole.	Clay.	234	1	234	1
Delaware st bet Howard and Union.	Manhole.	Pole.	Clay.	313	1	313	1
				2,356	6	14,136	1
Division st.	3rd av SE.	Lincoln st.	Clay.	61	2	122	1
				69	1	69	8
8th av N bet Emerson and Fremont.	Manhole.	Pole.	Clay.	114	1	114	1
18th st bet 2nd and 3rd st S.	Manhole.	Manhole.	Clay.	56	1	56	1
Franklin av bet 2nd and 3rd av.	Manhole.	Property line.	Clay.	68	1	68	1
1st st N bet 6th and 7th av.	Manhole.	Property line.	Clay.	92	1	92	1
5th st S bet 4th and 5th av.	Manhole.	Property line.	Clay.	58	1	58	1
5th st S bet 8th and 9th av.	Manhole.	Property line.	Clay.	58	1	58	1
5th st S at Marquette.	Manhole.	Curb.	Iron pipe.	17	1	17	1
40th st W at Pillsbury.	Manhole.	Pole.	Clay.	82	1	82	1
40th st W bet Grand and Harriet.	Manhole.	Pole.	Clay.	82	1	82	1
40th st bet Pillsbury and Grand.	Manhole.	Pole.	Clay.	78	1	78	1
40th st bet Pillsbury and Wentworth.	Manhole.	Property line.	Clay.	216	1	216	1
42nd st at Queen av.	For new manhole.						
42nd av N bet Lyndale and Bryant.	Manhole.	Pole.	Clay.	237	1	237	1
48th st W bet Pleasant and Grand.	Manhole.	Pole.	Clay.	91	1	91	1

Humboldt av.	20th st	Take at	Clay	32
Lagoon av 31st and 32nd av	Humboldt av	Alvord and W	Clay	31
Lake at bet 32nd and 33rd av	Clay	Property line	Clay	20
Lake bet 35th and 36th av	Clay	Property line	Clay	27
Lake bet 36th and 37th av	Clay	Property line	Clay	27
Lake bet 38th and 39th av	Clay	Property line	Clay	27
Lake bet 40th and 41st av	Clay	Property line	Clay	20
Lake bet 43rd and 44th av	Clay	Property line	Clay	20
Lowry av NE	Montrose st	Buchanan st	Clay	17 1/2
Lyndale av N bet 41st and 42nd av	Manhole	Pole	Clay	1 1/2
Lyndale av N at 42nd av	Manhole	Pole	Clay	20
Nicollet av at 14th st	Manhole	Manhole	Clay	1 1/2
Nicollet av at 20th st	Manhole	Manhole	Clay	5 1/2
Oak Grove st bet Nicollet and Vine Pl	Manhole	Property line	Clay	1 1/2
Oak Grove st bet Spruce and Clifton	Manhole	Property line	Clay	1 1/2
Pillsbury at 44th st	Manhole	Pole	Clay	1 1/2
Pillsbury at 48th st	Conduit	Pole	Clay	1 1/2
Superior av	Upton av	West City Tunnel	Clay	1 1/2
3rd av S bet 7th and 8th st	Clay	Property line	Clay	1 1/2
3rd av S at 20th st	Manhole	Manhole	Clay	1 1/2
3rd av SE	6th st	Intersection	Clay	1 1/2
10th av N bet Washington and 2nd st	Conduit	Pole	Clay	1 1/2
12th av S bet Washington and 3rd st	Manhole	Property line	Clay	1 1/2
12th av N bet 5th and 6th st	Manhole	Pole	Clay	1 1/2
12th av N	Revent	Emerson	Clay	1 1/2
21st st W	Russell av	M & S. T. R. R	Clay	1 1/2
24th st E	1st av S	Stations av	Clay	1 1/2
27th av NE bet Central and Polk	Manhole	Pole	Clay	1 1/2
32nd st bet Colfax and Dupont	Manhole	Pole	Clay	1 1/2
32nd st bet 28th and 29th av S	Manhole	Pole	Clay	1 1/2
36th st W bet Pillsbury and Humboldt	Manhole	Pole	Clay	1 1/2
36th st E bet Park and Columbia	Manhole	Pole	Clay	1 1/2
Upton av S	1st st	1st st	Clay	1 1/2

TABLE No. 54—Continued  
EXTENSIONS AND ADDITIONS MADE TO ELECTRIC CONDUIT SYSTEM IN 1915

NORTHWESTERN TELEPHONE COMPANY			CONDUITS		DUCTS		
STREET	FROM	TO	Kind Duct	Length Lineal Feet	Number	Lineal Feet	Number of Manholes
Western av. ....	DuPont av. ....	Cedar Lake Road. ....	Clay. ....	{ 1,560	8	12,480	..... 5
Washington av N at Bryant. ....	Manhole. ....	Pole. ....	Clay. ....	358	1	358	.....
Wash. av SE bet Oak and Walnut. ....	Manhole. ....	Property line. ....	Clay. ....	298	1	298	.....
				58	1	58	.....
Total feet. ....				30,551		147,280	.....
Total miles. ....				5.78		27.86	.....
Total manholes. ....							54

TABLE No. 54—Continued  
EXTENSIONS AND ADDITIONS MADE TO ELECTRIC CONDUIT SYSTEM IN 1915

TRI-STATE TELEPHONE COMPANY				CONDUITS		DUCTS		
STREET	FROM	TO	Kind Duct	Length Lineal Feet	Number	Lineal Feet	Number of Manholes	
Alley bet 7th & 8th st Nicollet & Henn.	Manhole	Property line	Iron pipe.	14	1	14	1	
Alley bet 20th & 21st av N Wash. & 3rd st.	Pole.	Property line	Clay.	107	1	107	1	
Alley bet Lake & 29th st, Stevens & 1st av S	Manhole	Pole.	Clay.	186	1	186	1	
Alley bet Lake & 29th st, Nicollet & 1st av S	Manhole	Pole.	Clay.	183	1	183	1	
Alley bet 7th & 9th st, Western & 2nd av N	Property line	Property line	Clay.	12	1	12	1	
Delaware st bet Harvard and Union st.	Pole.	Property line	Clay.	217	1	217	1	
Douglas bet Hennepin and Bryant.	Manhole	Property line	Clay.	44	1	44	1	
Filmore st.	23rd av NE.	24th av NE.	Clay.	344	4	1,376	1	
Franklin av E.	Conduit.	Pole.	Clay.	61	1	61	1	
	27th av S.	31st av S.	Clay.	1,690	4	6,760	3	
1st av N.	9th st N.	12th st N.	Clay.	811	1	811	1	
				1,040	4	4,160	1	
1st av S bet 18th and 19th st.	Property line	Property line	Clay.	28	1	28	1	
1st av S.	Lake st.	Alley bet Lake and 29th.	Clay.	61	1	61	1	
1st st N.	4th av N.	6th av N.	Clay.	162	2	324	2	
14th st bet Spruce and Vine Pl.	Manhole	Property line	Iron pipe.	527	1	527	1	
42nd st W.	Sheridan av.	Queen av.	Clay.	18	1	18	1	
				606	2	1,212	2	
				106	2	212	2	
				19	24	456	2	
43rd st W.	Vincent av.	Linden Hills blvd.	Clay.	97	12	1,184	2	
				387	2	774	2	
44th st W.	Upton av.	York av.	Clay.	122	1	122	1	
				1,177	4	4,708	4	
Hawthorne at 15th st.	Manhole	Property line	Clay.	200	1	200	1	
Lake st bet 2nd and 3rd av	Manhole	Property line	Clay.	111	1	111	1	
Mary Pl bet 12th and 13th st.	Manhole	Property line	Clay.	27	1	27	1	
Sheridan av S.	40th st W.	43rd st W.	Clay.	77	1	77	1	
				2,242	4	8,968	8	
Sheridan av S.	39th st W.	40th st W.	Clay.	347	1	347	1	
Spruce Pl bet Grant and 14th st.	Property line.	Property line	Clay.	639	4	2,556	2	
				63		130		

TABLE No. 54—Continued  
EXTENSIONS AND ADDITIONS MADE TO ELECTRIC CONDUIT SYSTEM IN 1915

TRI-STATE TELEPHONE COMPANY			CONDUITS		DUCTS		
STREET	FROM	TO	Kind Duct	Length Lineal Feet	Number	Lineal Feet	Number of Manholes
6th st N.	2nd av N.	3rd av N.	Fibre.	360	1	360	.....
17th av N. at 4th st.	Manhole	Pole	Clay	18	1	18	.....
3rd av S. at 6th st.	Manhole	Areaway	Clay	61	64	3,904	.....
24th av NE bet Taylor and Filmore.	Manhole	Pole	Clay	118	1	118	.....
26th av S.	Franklin av.	Lake st.	Clay	4,904	4	19,616	.....
				253	1	253	.....
				230	1	230	.....
26th st S bet Cedar and Longfellow.	Manhole	Pole	Clay	4,575	4	18,300	.....
38th st E.	12th av S.	23rd av S.	Clay	1,691	1	1,691	.....
Upton av.	43rd st. W.	46th st. W.	Clay	1,795	4	7,180	.....
				280	1	280	.....
Vine Pl at Clifton av.	Manhole	Property line	Clay	41	1	41	.....
Total feet.				26,053		87,838	.....
Total miles.				4.93		16.65	.....
Total manholes.							56

TABLE No. 54—Continued  
EXTENSIONS AND ADDITIONS MADE TO ELECTRIC CONDUIT SYSTEM IN 1915

TWIN CITY RAPID TRANSIT COMPANY				CONDUITS		DUCTS		
STREET	FROM	TO	Kind Duct	Length Lineal Feet	Number	Lineal Feet	Number of Manholes	
Hennepin av.....	Lake st.....	31st st S.....	Fibre.....	497	8	3,976	.....	
Total feet.....				497	.....	3,976	.....	
Total miles.....				.09	.....	.75	.....	
Total manholes.....				.....	.....	.....	.....	
UNITED STATES GOVERNMENT				CONDUITS		DUCTS		
STREET	FROM	TO	Kind Duct	Length Lineal Feet	Number	Lineal Feet	Number of Manholes	
2nd av S.....	New Post Office.....	3rd st S.....	Clay.....	591	6	3,546	2	
3rd st S.....	Old Post Office.....	2nd av S.....	Clay.....	365	6	2,190	2	
Total feet.....				956	.....	5,736	.....	
Total miles.....				.18	.....	1.09	.....	
Total manholes.....				.....	.....	.....	4	



TABLE No. 55  
SUMMARY OF UNDERGROUND ELECTRIC CONDUITS CONSTRUCTED PRIOR TO JANUARY 1, 1916

	Clay, Vitrified Including All Makes		Fibre, Either of Treated Paper or Pulp		Iron and Steel Pipe, Including Sheet- Iron Pipe Lined With Cement		Wood: W. C. Wood Treated; is Untreated		Asphalt As D. Dorsett	
	Conduit	Duct	Conduit	Duct	Conduit	Duct	Conduit	Duct	Conduit	Duct
Miscellaneous companies*	*1,666	*8,432			1,574	1,574				
Minneapolis General Electric Co.	157,288	1,246,297	20,355	80,385	113,075	296,874			39,702	340,134
Municipal Subway	97	776			17,081	29,867	1,204	4,375		
North American Telephone Co.	8,379	16,085			1,684	175				
North Western Telephone Co.	497,377	2,577,807	9,386	72,235	73,237	106,817	1,283	7,170		
Tri State Telephone Co.	303,327	1,252,616	30,519	94,082	65,621	79,363				
Twin City Rapid Transit Co.	124,117	774,441	89,128	624,091	40,283	92,159	21,327	376,424		
Western Union Telegraph Co.	610	1,220			33,379	66,520				
Total lineal feet	1,092,861	5,877,674	149,388	870,783	345,934	665,749	23,904	387,969	39,702	340,134
Total miles	203.97	1,113.19	28.19	164.92	65.52	126.09	4.52	73.48	7.52	64.42

Grand total miles of conduits, 312.85.

Grand total miles of duct, 1,542.10.

\*Includes conduit built by U. S. Government in 1915

**TABLE No. 55—Continued**

**SUMMARY OF UNDERGROUND ELECTRIC CONDUITS LAID IN 1915**

[illegible]

**TABLE No. 56**  
**GENERAL SUMMARY BY COMPANIES OF CONDUITS CONSTRUCTED PRIOR**  
**TO JANUARY 1, 1916**

COMPANIES	Conduit		Duct	
	Feet	Miles	Feet	Miles
Miscellaneous companies **	3,240	.61	10,006	1.89
Minneapolis General Electric Co.	331,714	62.83	1,968,065	372.74
Municipal Subway	17,178	3.25	21,443	4.06
North American Telegraph Co.	10,063	1.91	17,860	3.38
North Western Telephone Co.	581,283	110.09	2,764,019	523.48
Tri-State Telephone Co.	399,467	75.65	1,426,061	270.09
Twin City Rapid Transit Co.	274,855	52.85	1,867,115	353.62
Western Union Telegraph Co.	33,989	6.43	67,740	12.83
Totals	1,651,789	312.85	8,142,309	1,542.10

\*\*Includes conduit built by United States Government in 1915.

\*\*\*"Dorsett"—10,197 feet of conduit owned by Minneapolis General Electric Co. and used by Municipal Subway.

††"Dorsett"—9,993 feet of conduit or 10,814 feet of duct, leased by the North American Telegraph Co.

§"Cement Lined Pipe"—9,961 feet of conduit or 33,291 feet of duct is included under "iron pipe."

"Edison Wire Tube"—29,659 feet of conduit or 58,006 feet of duct, is included under "iron pipe."

‡"Cement Lined Pipe"—35,234 feet of conduit or 72,504 feet of duct is included under "iron pipe" and which was formerly listed under St. Anthony Falls Water Power Co.

\*\*Miscellaneous Companies" includes such as were formerly listed under "American District Telegraph Co.," "Mutual Building Co.," "North Star Woolen Mills Co.," and the U. S. Government usually having short runs and generally this heading "Miscellaneous Companies" will include any work not extensive enough to demand a separate heading.

††"Minneapolis General Electric Company" includes besides the work actually done by the company, such work as the "Dorsett" and "Edison Wire Tube" also the runs of the old Minnesota Brush Co. and the Minneapolis International Electric Company.

§§"Municipal Subway" includes chiefly work done by the Minneapolis Fire Department.

‡†"Tri-State Telephone Company" includes all the work done by the original company, "Mississippi Valley Telephone Co.," and its successor, "the Twin City Telephone Co."

\*\*\*\*"Twin City Rapid Transit Co." includes the work of the Minneapolis Street Railway Co. and The St. Anthony Falls Water Power Co.

Underground electric conduit practice in Minneapolis is about as follows: Operating under the City Ordinances and Regulations, the private companies furnish and install the complete system.

The kinds of conduits most in use are Vitrified Clay, Fibre and Iron Pipe, Vitrified Clay, formerly varying widely in the different makes, has become more or less standardized and not very much attention as paid to "make" where all are good. Different makes are used, sometimes, on the same run according to which kind of conduit is on hand.

Clay conduit is laid in concrete, some practice placing concrete on bottom and top, with laps of concrete over the side joints of the conduit; other practice requires a complete surrounding of the conduit with concrete from end to end of run. Burlap is usually laid over the joints before the concrete is put on.

Fibre conduit is made in two ways at least, one being the wrapping of thick paper around a mandril, and the other being the pressing of pulp into place. Both kinds are treated with an Asphalt or Tar material. The fibre conduit is round, comes in single ducts, is bedded in concrete, which is also poured between the ducts of the conduit, and concrete is placed above.

Iron, or rather steel, pipe is much used. It is screwed together, and is laid without protection of concrete.

Cresosoted wood is little used, chiefly in damp situations.

Manholes are made either of brick or concrete, and covered with brick or concrete held up by steel beams, etc.

**TABIP No. 87**  
**WORK DONE BY OFFICE DIVISION IN 1913 PLANS, MAPS, ETC.**

	Sewer Dept		Bridge Dept		Water Works Dept			General Dept				Total	
	Sewer	Square Feet	Bridges	Square Feet	Water Mains	Mile of Mains	Square Feet	Street Openings	Count	Sections	Street Mains	Square Feet	Number
Mounted plans	83	313						311	20			180	
Unmounted plans			218	212								40	
Tracings	118	438	246	246			407	800				100	
Blue prints	223	743	114	114	80	408	680	30	34	600	180	8,500	
Profiles	33	103	201	201				883				700	
Totals	493	1,623	799	798	314	216	1,087	2,011	46	608	180	9,010	
Specifications													
Resolutions													
Annulling and amending													
Ordering													
Vacating													
Street openings													
Appointing Commissioners													
Ordinances													
Roadways													
Street names													
Ordering													
Motions													
Communications													

TABLE No. 58  
SPECIAL ASSESSMENTS

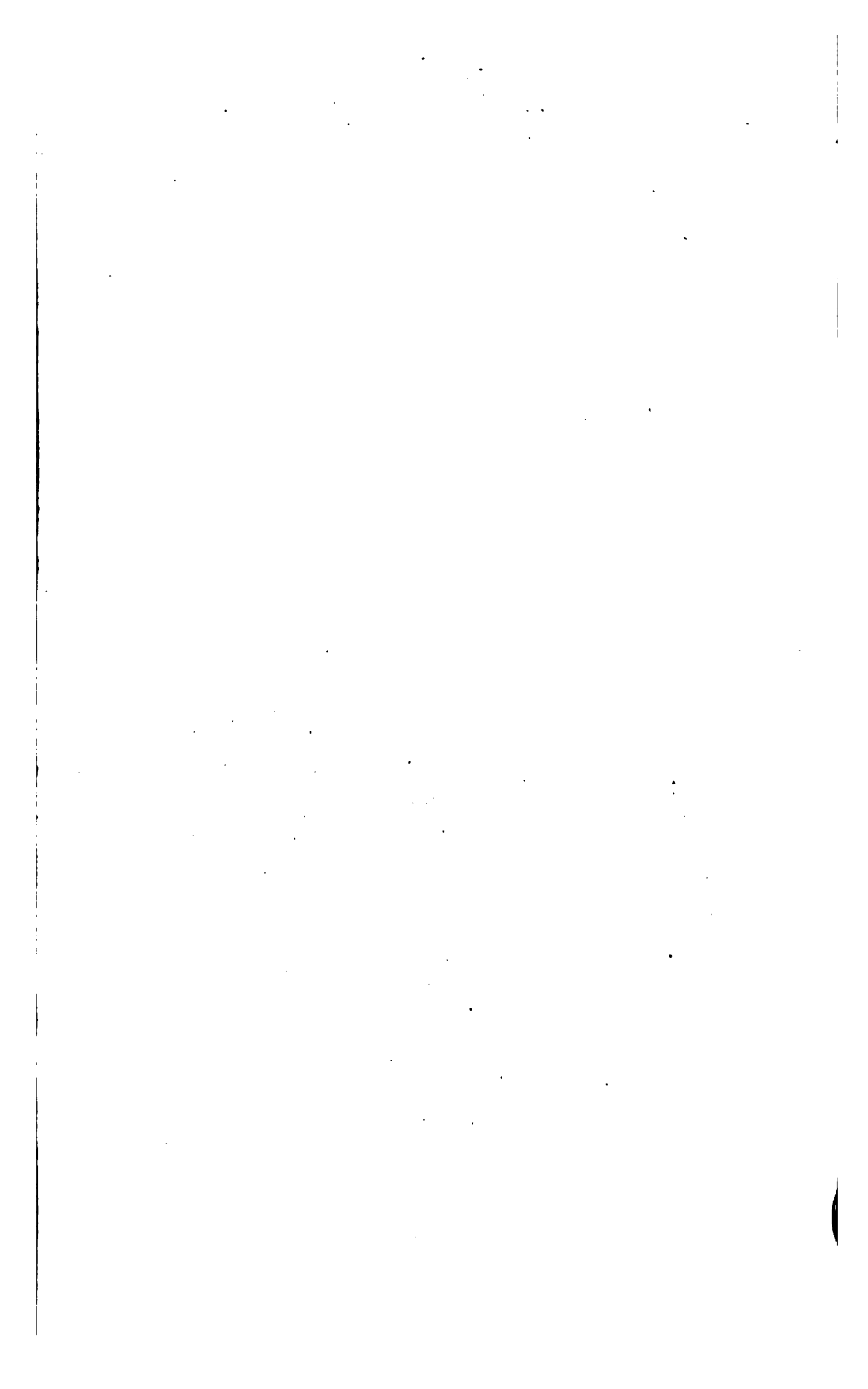
No. of	Tax of 1914			Rebate of Tax of 1914 and Previous Years						Tax of 1915			
	Amount of Assessment	No. of Rolls	No. of Description	Amount of Annulments	No. of Certificates	No. of Refundments	Total	Amount of Certificates	Amount of Refundments	Total	Total Assessments 1915 Tax	No. of Rolls	No. of Description
Paving	\$298,224.03	57	1,627	\$5,928.94	210	62	272	\$5,340.84	\$588.10	\$5,928.94	\$176,673.96	43	1,327
Paving additional.	11,408.94	15	480	15.04	2	2	2	15.04	15.04	15.04	4,119.43	10	61
Sewer.....	255,633.18	100	3,647	1,918.09	93	E 110 47	250	1,001.79	E 606.20 310.10	1,918.09	228,552.60	104	3,199
Sewer additional	1,017.45	3	136	1,865.94	5	E 307 7	319	119.88	E 1,671.38 74.68	1,865.94	256.73	2	34
Water main.	122,360.37	136	3,418	1,428.69	106	27	133	1,270.60	158.09	1,428.69	122,873.63	138	3,605
Curb.	119,372.92	175	6,212	1.84	1	1	1	1.84	1.84	1.84	1,234.19	199	6,197
Curb moved	718.22	17	74	1.84	1	1	1	1.84	1.84	1.84	1,234.19	199	6,197
Curb repairs	32.00	1	2	5,107.65	508	73	581	4,994.26	218.95	5,213.21	249,137.54	763	72,022
Sprinkling	234,301.52	740	68,386	58,591.97	B 658 A 897	B 717 A 955	895	B 37,147.14 A 62,033.55	B 2,183.12 A 2,567.89	B 39,330.26 A 64,601.44	65,448.58	150	2,386
Sidewalk	146,741.30	277	5,410	508.31	89	3	89	508.31	508.31	508.31	17,467.56	13	3,889
Sidewalk repairs	12,758.59	13	2,850	508.31	3	3	3	315.40	315.40	315.40	6,340.40	13	138
Sewer & water, house conn.	7,559.54	8	138	305.40	3	3	3	315.40	315.40	315.40	18,989.52	13	1,187
Rubbish removed	4,086.48	6	300	.90	1	1	1	.90	.90	.90	6,347.54	3	99
Street opening	4,086.48	6	300	.90	1	1	1	.90	.90	.90	6,347.54	3	99
Street Acq. Elwell	375,282.25	28	4,636	10.34	1	1	1	10.34	10.34	10.34	948,197.10	72	21,145
Paving resurf.	122.33	3	8	250.00	7	3	10	202.68	47.32	250.00	51.18	2	2
Paving additional resurf.	4.35	2	4	250.00	7	3	10	202.68	47.32	250.00	51.18	2	2
Sewer resurfacing	163.47	6	19	250.00	7	3	10	202.68	47.32	250.00	634.05	3	31
Sewer additional resurfacing	1.32	1	1	250.00	7	3	10	202.68	47.32	250.00	634.05	3	31
Curb resurfacing	124.49	7	34	250.00	7	3	10	202.68	47.32	250.00	83.54	3	10
Curb moved resurfacing	109.73	1	7	250.00	7	3	10	202.68	47.32	250.00	83.54	3	10
Curb additional resurfacing	31.08	1	1	250.00	7	3	10	202.68	47.32	250.00	83.54	3	10
Water main resurfacing	180.48	9	29	11.68	4	4	4	11.68	11.68	11.68	8.50	2	2
Sidewalk resurfacing	143.79	9	18	9.00	1	1	1	9.00	9.00	9.00	279.96	7	29
Sidewalk repairs resurfacing	89.03	7	29	6.37	1	1	1	6.37	6.37	6.37	416.19	12	74
Sprinkling resurfacing	89.03	7	29	6.37	1	1	1	6.37	6.37	6.37	101.11	7	35
Sewer & water house conn. re-assessment.	144.50	2	2	6.37	1	1	1	6.37	6.37	6.37	101.11	7	35
Total	\$1,591,615.41	1,627	97,561	\$75,970.16	2,497	843	3,340	\$112,989.62	\$8,425.83	\$121,415.45	\$1,971,985.65	1,570	115,654

FMM

E—Excess.

B—Built by owner.

A—Annulled.











DEC 11 1933



